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AMERICAN

DYESTUFF REPORTER

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A.A.T.C.C. CONVENTION NUMBER

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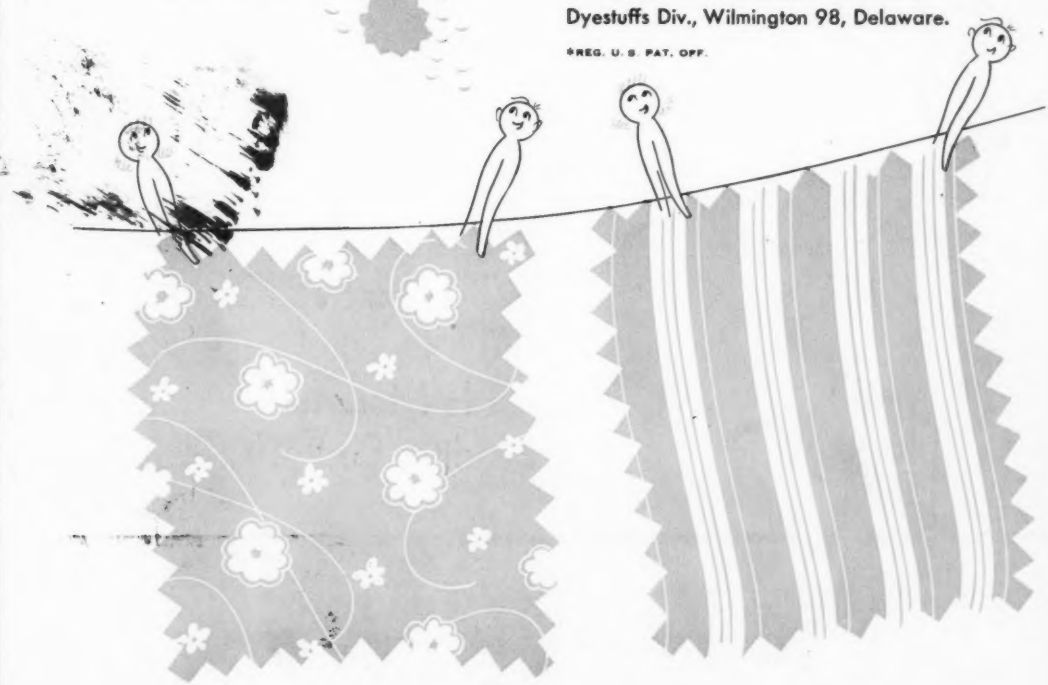

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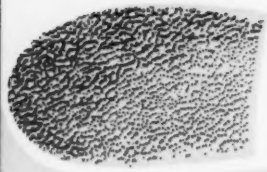

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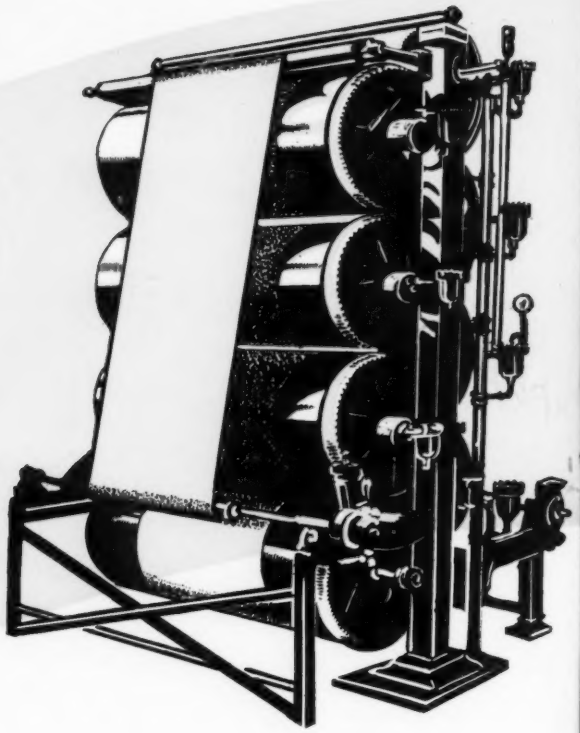

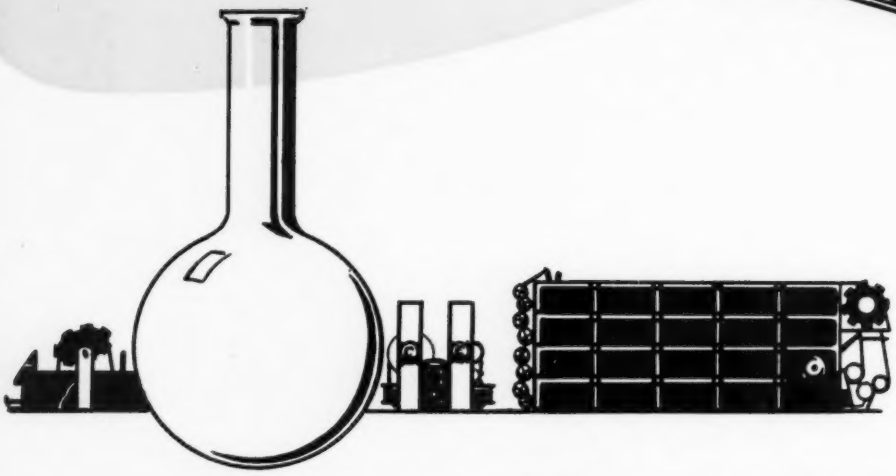

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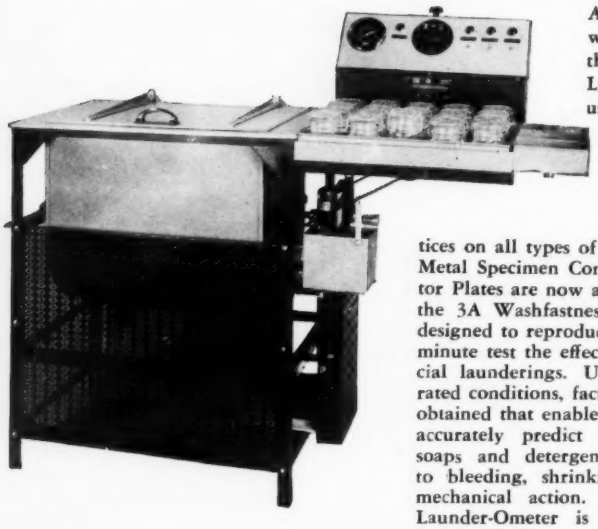
ATLAS LAUNDER-OMETERS



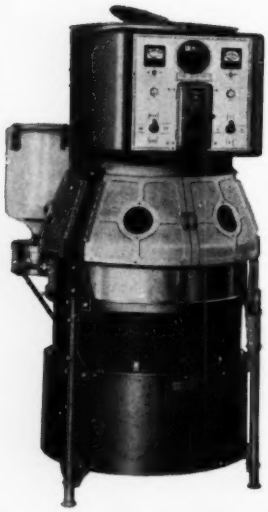
As the standard washing machine of the A.A.T.C.C., the Launder-Ometer is used to reproduce quickly the destructive effects of commercial laundering practices on all types of fabrics. The New Metal Specimen Containers and Adaptor Plates are now available for use in the 3A Washfastness Test which was designed to reproduce in one forty-five minute test the effects of five commercial launderings. Under these accelerated conditions, factual information is obtained that enables manufacturers to accurately predict color fastness to soaps and detergents, and resistance to bleeding, shrinking, washing and mechanical action. In addition, the Launder-Ometer is used for dyeing tests at boiling point.

Precision controls in the Launder-Ometer permit careful regulation of all factors, and identical reproduction of tests whenever desired. With its big capacity, the machine permits as many as 20 tests to be run simultaneously. The Atlas Pre-heating Loading Table—standard equipment on Launder-Ometers—makes it possible to start all tests at the same temperature, for greater accuracy. Mechanical action is provided by the introduction of stainless steel spheres or rubber balls into each container.

Located behind the Pre-heating Table, at the most convenient height is the modern control cabinet housing all switches, pilot lights, indicating and control instruments, and direct-reading dial type thermometer. Launder-Ometers are available for use with electricity, steam, gas, or both electricity and steam for heating the water bath.

In the Launder-Ometer, all sheet metal parts coming into direct contact with water, including the test chamber and cover, and pre-heating loading table are constructed of stainless steel for permanent resistance to corrosion.

ATLAS FADE-OMETER



The Fade-Ometer brings under laboratory control the deteriorating action of sunlight on any material or type of finish. Used primarily to measure the light fastness of colors, the Fade-Ometer is also used to determine other photochemical changes caused by exposure to sunlight.

In making tests, samples in masked holders are rotated around an Atlas Carbon Arc—the closest approach to natural sunlight—at a fixed distance from the arc and at a constant speed in order to assure equal distribution of light to each sample. Upper and lower suspension rings keep samples in proper vertical alignment. Color fastness is measured in terms of Standard Fading Hours, using new calibration paper.

Operation of the Fade-Ometer is fully automatic. The simple, but complete control panel includes voltmeter, ammeter, running time meter, time switch, thermo-regulator, pilot lights and switches, which serve to keep all variable factors — time, temperature, humidity, and light — under accurate control.

The Fade-Ometer may safely be left in continuous operation overnight. It is furnished with water pan and test chamber constructed of 18-8 stainless steel, and with a wide variety of sample holders and exposure masks.

Manufacturers of the Twin Arc and Sunshine Arc Weather-Ometers

ATLAS ELECTRIC DEVICES COMPANY 361 West Superior Street, Chicago 10, Illinois

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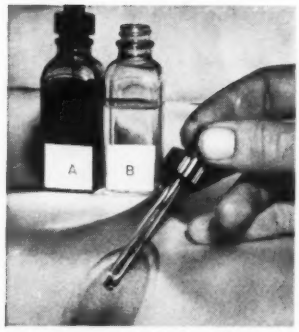
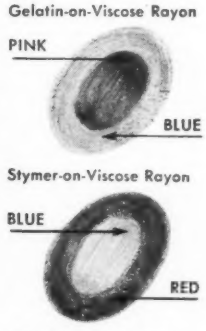
Try STYMER for Size on Viscose

TYPICAL EXAMPLES OF STYMER IN USE ON VISCOSE

Type of Cloth →		Plain Weave	Plain Weave
Warp yarn type		150/40/3 Dull	100/60/2.5 Dull
Construction		72/46	92 x 64
Number ends		3,020	3,860
Stymer S concentration		20#/100 gals.	20#/100 gals.
Size box temperature		120°F.	120°F.
Roll pressure		850#	850#
Slasher System		Cotton	Cotton
Can Temperature Back to Front	1	160	170
	2	175	180
	3	190	190
	4	200	200
	5	200	200
	6	200	200
	7	140	160
Slasher Speed		40 yds./min.	40 yds./min.
Stretch		6%	5½%
Type Loom		Automatic	Automatic
Speed		172 PPM	170 PPM
Temperature		80°F.	82°F.
R.H.		62%	65%

TESTS IDENTIFY STYMER OR GELATIN





A drop of "Solution B" in the middle of the dyed spot formed by "Solution A" gives color clues to Stymer and gelatin on yarn or greige goods. For full information on two test methods, please send for the handy booklet.

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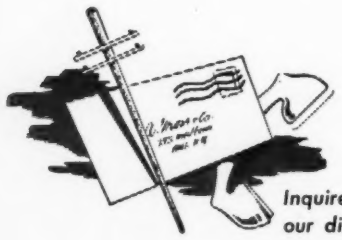
	4-6°T.	L.C.P.	D.P.
Titre °C	4°-6°	8°-10°	18°-20°
Cloud Point °F.	38°-42°	46°-49°	63°-71°
Color Lovibond 1" Red	4-7	4-7	4-7
Color Lovibond 1" Yellow ...	20-40	20-40	20-40
Unsaponifiable %	2.5 max.	2.5 max.	2.0 max.
Saponification Value	196-199	196-199	197-200
Acid Value	195-198	195-198	196-199
% F.F.A. as Oleic Acid ..	98-99.5	98-99.5	98.5-100.0
Iodine Value ...	90-93	88-91	80-85

ADVANTAGES

- √ **1. Low Titre.**
- √ **2. Reduced amounts of saturated acids.**
- √ **3. Unsaponifiables as low as 1%.**
- √ **4. Makes higher soap concentrations.**
- √ **5. Free of undesirable esters.**



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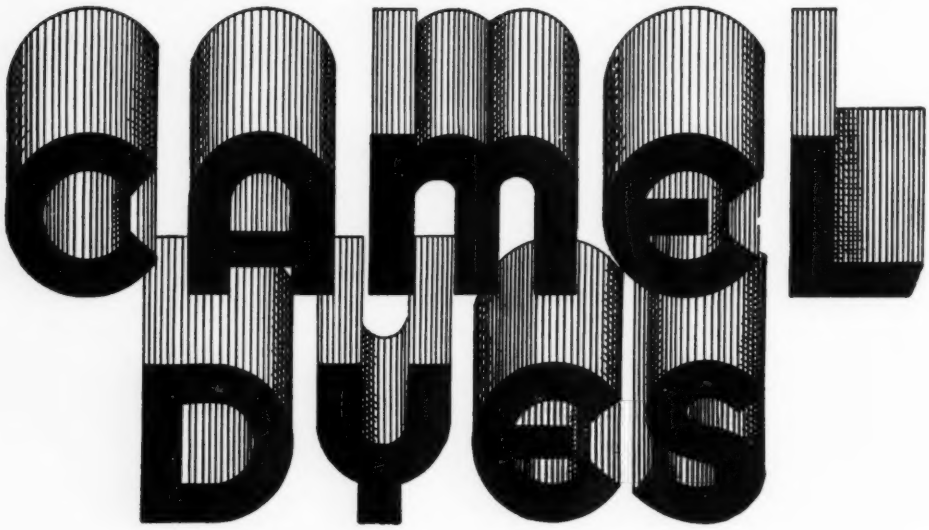

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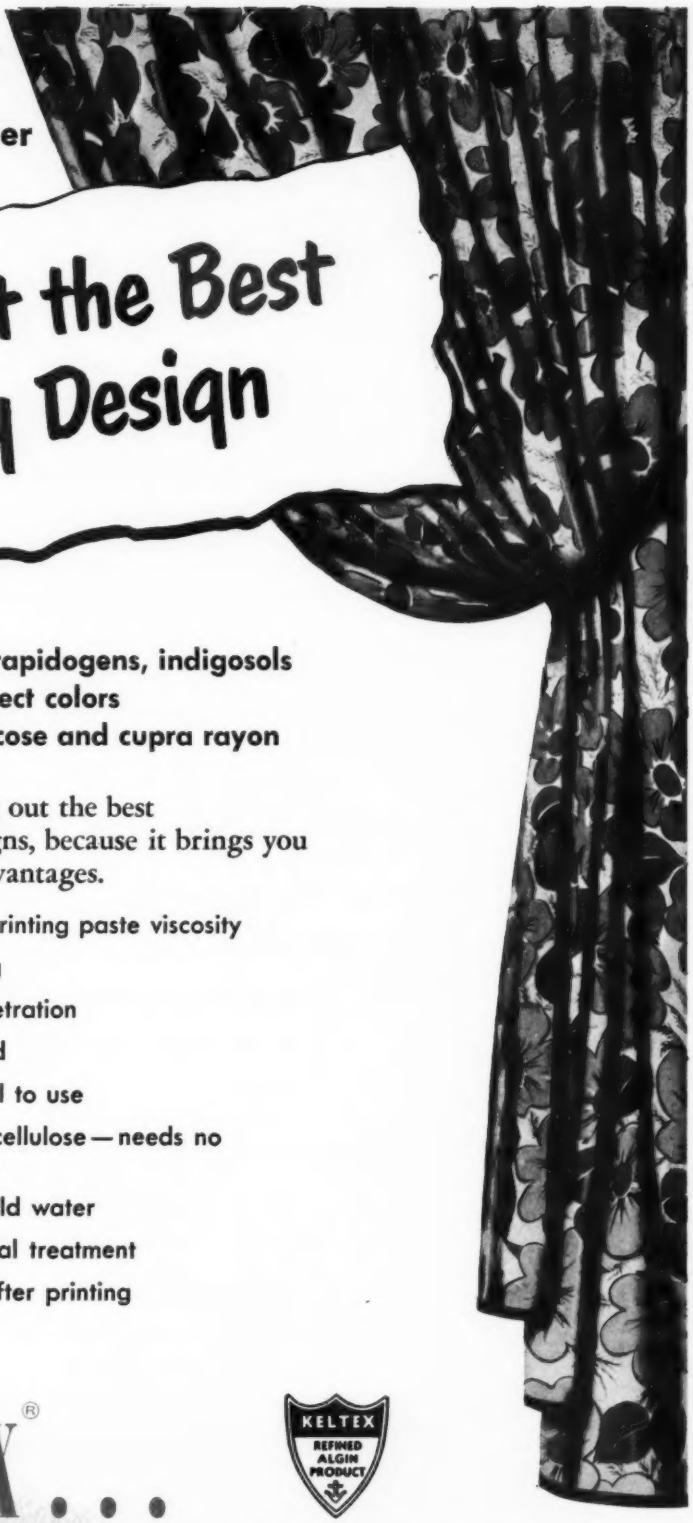

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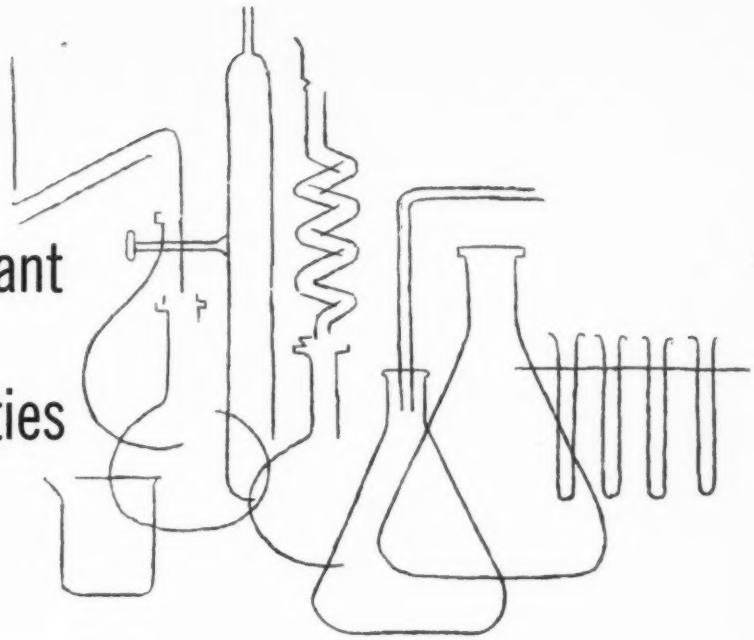

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BETTER TEXTILE PROCESSING

A Digest of Late Developments in

Issued By
THE ATLANTIC CHEMICAL CO., INC.,

Faster and Complete Piece Carbonizing

Modern piece carbonizing demands the complete removal of all vegetable matter from the fabric. This demand, coupled with keener competition, makes it necessary to do a better job in as short a time as possible. Incomplete carbonizing or removal of vegetable matter results in dull, smudgy shades which are undesirable and unappealing.

Many woolen and worsted processers have incorporated surface active agents in the carbonizing bath in order to get better wetting of the vegetable matter and thus more complete carbonizing. A surface active agent that would maintain a high degree of wetting and at the same time cause the sulphuric acid to penetrate quickly and efficiently into the vegetable matter has been long sought for.

ATCO has developed new foaming and non-foaming carbonizing assistants that have exceedingly high wetting and penetrating speeds in carbonizing solutions. These new products are called ATCO CARBOWET B and ATCO CARBOWET BF. They have been tested on wool containing high percentages of vegetable matter including shives and burrs.

Modern piece goods carbonizer in operation in busy New England plant. Shown are impregnation tank and squeeze rolls in foreground, dryer and heating unit in background.

ATCO CARBOWET B and ATCO CARBOWET BF in plant runs show complete carbonization at greater speeds, particularly in those plants where maximum machine speeds were unobtainable due to the slow and incomplete penetration of the sulphuric acid into the vegetable matter. The resulting efficiency greatly reduces the time necessary in the dry milling operation.

Graphite Removal from Nylon Lace

The removal of graphite from nylon lace has caused lace manufacturers and processers endless headaches. Common type detergents and ordinary methods of soil removal do not remove graphite deposited on nylon in the loom. A study was made of this problem and it was found that the graphite adhered to the nylon by mechanical and electrical means. It was therefore necessary to manufacture a chemical compound that would reverse the electrical charge of the carbon and at the same time wash it free.

A product to do this job was developed at ATCO and has met with tremendous success in the industry. This product is called ATCO GRAPHITE REMOVER. It is supplied in high and low viscosities to suit varying types of lace washing machinery. The use of ATCO GRAPHITE REMOVER is quite simple; it is simply poured onto the lace in the washer using just enough to saturate the lace. The machine is then allowed to run for ½ hour with light pressure on the squeeze rolls. The Graphite Remover is then gradually diluted with water over a ten-minute period and then finally rinsed free. This process has produced cleaner nylon in a much shorter length of time.

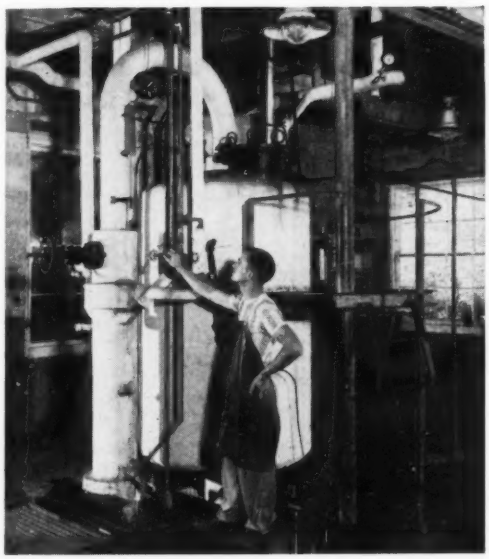
Controlled Scouring of Lightweight Woolens and Worsteds

Ordinary soaps tend to overwork lightweight woolens and worsteds by increasing the fulling action of the washer rolls. Once the fiber has been lifted and felted, no succeeding mill oper-

THROUGH BETTER TEXTILE CHEMICALS

Modern Textile Research and Application

CENTREDALE, RHODE ISLAND



Newly installed condensation unit at ATCO. For use in manufacture of the more complex textile auxiliaries.

ation can return the fabric to its original and desired clear, crisp hand. Synthetic detergents were developed which helped in maintaining the desired condition; but in each one the lack of some special property still made scouring difficult and very hard to control.

ATCO has introduced a new type synthetic detergent which will scour all lightweight woolens and worsteds without felting the fibers more than the action of water alone. The colors maintain their brightness and clearness and the firm, clear and crisp properties of the fabric are not altered. This new product is called ATCOPAL D-SPECIAL and can be used alone or in conjunction with a small amount of alkali.

Dispersion of Acetate Colors in Dyeing

A complete study has been made by the ATLANTIC CHEMICAL CO., INC. of the difficulties encountered in the dispersing and dyeing of acetate colors. This work was prompted by the many inquiries from the trade asking for better acetate dyeing dispersing agents and for the elimination of constant dyeing troubles. These difficulties involve specking due to poor dispersion, tarring up and spotting (particularly acetate blues), scumming on the surface of the dye bath, and excessive foaming. It was noted also that in every case of poor dispersion, a poor money value dyeing resulted.

All the available types of dispersing and surface active agents were tested and evaluated and it was found that not one product had the combination of properties necessary to eliminate completely every dyeing difficulty. Therefore, it was necessary to take the product that came closest to satisfying all the acetate dyeing conditions and to modify it in its manufacture to give it all the desired properties. Through this work ATCO developed a new product called ATCONIL DAC-25 which definitely has the combined chemical and physical properties necessary to bring about the elimination of specking, tarring, scumming and excessive foaming. ATCONIL DAC-25 insures complete dispersion and efficient dyeing.

It is recommended that after the acetate color has been weighed out in a container, it be thoroughly wet-out and mixed with enough ATCONIL DAC-25 to form a smooth paste. Hot water at 180° — 190°F. is then poured onto this paste with enough agitation to completely disperse the color throughout the mixture. Two pounds of ATCONIL DAC-25 per 100 gallons of water are then added to the dyeing unit after which the previously dispersed acetate color is then strained in. The product seems to work most efficiently when this recommended procedure is used. It is also recommended that in making the initial concentrated dispersion not more than five pounds of color be dispersed in 3 gallons of water. This is a definite aid in preventing tarring and specking.

Samples and Technical Data On All ATCO Products Discussed Herein Are Available On Request.

If Your Problem is to Introduce Chlorine Into Organic and Inorganic Compounds,

Consult HOOKER

As inventors of the famous Hooker "S" Cell for the production of high quality Chlorine, it is natural for Hooker to specialize in the manufacture of Chlorine compounds. In addition to liquid chlorine, there are several other chlorinating agents manufactured by Hooker. For various types of organic and inorganic chlorinations you may select the one best suited to your processing requirements. Their uniformity and high quality enable the user to prepare products of uniformly high quality without costly variations in manufacturing procedure.

In addition, the experience of Hooker's technical staff is available to you for consultation on any processing or handling problems.

THIONYL CHLORIDE • $SOCl_2$

Since Thionyl Chloride has been commercially available in a high degree of purity, it has become of increasing importance to the synthetic organic chemical industry. It reacts with the hydroxy group usually replacing it with an atom of chlorine. It reacts with the organic acids to produce acid chlorides or anhydrides. By the use of high vacuum during distillation good results are obtained in the production of the acid chloride of stearic acid and other high molecular weight fatty acids.

Thionyl Chloride may also be used to introduce sulfur alone or in combination with oxygen.

For technical data on Thionyl Chloride, write on your company letterhead for Hooker Data Sheet No. 718.

Molecular Wt.	119
Description	Pale yellow to red liquid
Freezing Pt.	Below—75°C
Boiling Range	Technical grade 72° to 79°C Refined grade 75° to 78°C
Spec. Grav. at 15.5°C	1.640
Analysis	Technical grade 93.0% by wt. $SOCl_2$ Refined grade 97.5% by wt. $SOCl_2$

SULFURYL CHLORIDE • SO_2Cl_2

Sulfuryl Chloride is an inorganic compound most useful in the synthesis of organic chemicals. As a chlorinating agent Sulfuryl Chloride has the advantage of reducing substantially the heat of chlorination over that of using elementary chlorine. Furthermore it is possible by using different catalysts, reacting at different temperatures and by carefully controlling proportions to chlorinate selectively.

Five types of reactions of Sulfuryl Chloride with organic compounds are of importance: (1) chlorination of aromatic compounds; (2) chlorination of aliphatic compounds; (3) sulfonation of aliphatic compounds; (4) acylation (preparation of esters, acid chlorides, anhydrides, etc.); (5) condensation and miscellaneous reactions.

For technical data on Sulfuryl Chloride write on your company letterhead for Hooker Data Sheet No. 717.

Molecular Wt.	135
Description	Light yellow liquid
Freezing Pt.	Below —54°C
Boiling Range	2° including 69.5°C
Spec. Gravity at 15.5°C	1.680
Analysis	Over 99% by wt. SO_2Cl_2

SULFUR CHLORIDES • Mono—S_2Cl_2 Di—SCl_2

Sulfur Monochloride and Dichloride are so closely related that their uses should be considered together. Sulfur Monochloride is a definite chemical compound with well defined properties, but the Dichloride may be considered as the equivalent of chlorine dissolved in S_2Cl_2.

The sulfur chlorides react with unsaturated hydrocarbons introducing sulfur and chlorine into the molecule. In addition there are a substantial number of reactions for which the chlorides are definitely indicated as a ready source of chlorine because of their advantages of handling, of storage and low price.

For technical data on Sulfur Dichloride, write on your company letterhead for Hooker Data Sheet No. 759. For data on Sulfur Monochloride request Data Sheet No. 760.

	Sulfur Dichloride SCl_2	Sulfur Monochloride S_2Cl_2
Mol. Wt.	103	135
Description	Dark brown or reddish liquid	Yellow to slightly reddish liquid
Freezing Pt.	—78°C	—80°C
Boiling Pt.	Decomposes above 40°C	138°C
Spec. Gravity at 15.5°C	1.638	1.6885
Analysis by wt.	66% Cl_2	52 to 52.5% Cl_2

For more detailed information write us on your firm letterhead. We will send you Technical Bulletin 328A "Chlorinating Agents," which describe these and other Hooker chemicals for chlorinating.

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HOOKER ELECTROCHEMICAL COMPANY

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Columbus, Ga. New Orleans Chattanooga Toronto

CALCO dyelines

No. 16 of a series

PUBLISHED BY AMERICAN Cyanamid COMPANY CALCO CHEMICAL DIVISION,
DYESTUFF DEPARTMENT, Bound Brook, New Jersey
New York • Chicago • Boston • Philadelphia • Charlotte • Providence

Residual Acid in Carbonized Wool

The residual acid found in wool which has been subjected to sulfuric acid carbonization can be turned to advantage in the application of Calcofast* Wool Dyes. There is less damage to the wool; acid costs are lowered since less acid is required in dyeing; and a better control of the shade is obtained.

After the cloth has passed through the entire carbonizing procedure, it must be thoroughly wet out before satisfactory dyeings can be made. This can be done readily by passing the cloth into a water bath containing a suitable wetting agent, such as 0.5% Deceresol® OT Wetting Agent, at 140-150°F. This can either be used for dyeing by cooling back to 110°F., or it can be dropped and a fresh bath made up.

The well-dissolved Calcofast Wool Dyes are added to the dyebath at 110°F., the bath raised to the boil and boiled for one-half hour. At this point, sufficient sulfuric acid to produce a dyebath with a pH of 1.8-2 (usually 1-2% acid) is required, and the dyeing is continued at the boil for one hour. The cloth is then finished in the usual manner. *Trade-mark

An Economical Yellow for Sweater Yarns

Calcocid* Yellow MCG, which is tartrazine, possesses the desirable characteristics of "the level dyeing acid dyes." Calcocid Yellow MCG is recommended to produce a full-bodied golden yellow. All tartrazines level quite well, have moderate to good fastness to light, and moderate fastness to wet-finishing operations.

Calcocid Yellow MCG is an important color to dyers of sweater yarns. Its high tinctorial color value

makes it economical to use in sweater shades such as gold, crimson, maroon and burgundy reds, golden browns, mahogany and seal browns, kelly and dark greens, and for jetting acid blacks.

Calcocid Yellow MCG is used on ladies' dress goods, overcoating fabrics, hand-knitting yarns and carpets. *Trade-mark

Good Fastness in Sulfur Blue

Calcogene* Brilliant Blue 3GCF Conc. is a popular bright blue sulfur dye that produces good fast shades economically. Special care is exercised during manufacture of this improved dye to assure its good solubility. Calcogene Brilliant Blue 3GCF Conc. is applicable to yarn in package form, to warp yarn by pad-steam methods, and to piece goods by pad-steam or Williams Unit procedure. *Trade-mark

For the Textile Bookshelf

Reprinted — The Practical Art of Color Matching (Calco Technical Bulletin No. 573) by William H. Peacock, Technical Service Department. This is the second printing of this popular bulletin. Some revisions and additions were made to include the latest thinking on this important subject.

Revision — Descriptive Index of Calco Technical Bulletins (Calco Technical Bulletin No. 761A, New Second Edition) — abstracts all bulletins published to date; helpful cross-index aids in selecting bulletins pertaining to special problems.

Over 1,000 gallons of paint are used monthly to spray Calco packages and containers.

A Fast, Level Gray

Superior leveling and fastness properties recommend Calcosol* Gray 2G Double Paste or Calcoloid* Gray 2G Double Powder for package and beam dyeing. This fast gray is widely used in jig, pad-jig, pad-booster, and pad-steam methods for piece goods.

Because it is not sensitive to heat and moisture, this dye is popular for large-scale continuous dyeing where quick and accurate matching is necessary, both in the dyers' office and in the examining and shipping room.

It has wide use on sewing threads, knitting yarns and for colored thread effects. It is valued for work clothing, sportswear and other such fabrics which are given various permanent finishes, to withstand rugged consumer use. *Trade-mark

The Assistant P.A. Makes a Terrific Buy

THE PURCHASING AGENT asked his new assistant, "Any reason for holding up these Calgon* requisitions?"

"Price," the young assistant said, "I heard about a substitute that's cheaper, so I . . ."

"I see." The P.A. sat down. "Seems like you're getting kind of thrift-conscious since you bought that new car of yours."

"YEAH, I GUESS maybe I am," the assistant admitted, "but it's worth it. Sure is a honey of a car."

"Really good, huh?"

"TERRIFIC. I sure got a buy!"

"Rock-bottom price, huh?"

The assistant P.A. said, "Well, not exactly. I figure you have to consider a lot of other things, too, in buying a car—things like dependability and service and the reputation the car's made for itself. After all, a car's a pretty important investment."

THE P.A. SAID, "Sure is. I'm glad you did okay on yours. But about these Calgon requisitions . . . what's this substitute you mentioned?"

"Oh . . . it's a phosphate I got a line on the other day."

"A PHOSPHATE? I thought these requisitions were for Calgon. Anyway, who makes this phosphate?"

"Some company upstate. I forget the name. But the price is really right."

"HOW ABOUT UNIFORMITY? Any proof this stuff produces identical results every time?"

"Well . . . I was going to . . ."

" . . . going to run into trouble," the P.A. finished for him. "You haven't been on the job here very long, but you can't learn too soon that Calgon is mighty important in our operations. We *know* what Calgon will do. We *know* the Calgon organization. You see . . ."

"I GET IT," the young assistant said, "it's like when I bought my car. Things like dependability and reputation and service."

"Yeah. Like you said, they're pretty important."

"They sure are. I'll put these Calgon requisitions through right away."

*T.M. Reg. U.S. Pat. Off.

HAGAN HALL BUROMIN CALGON

calgon, inc.

A SUBSIDIARY OF HAGAN CORPORATION

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This Fall will see wool customers far more exacting than any seen in the past. Customers are learning that a good wool product is a better wool product if it's WASHABLE!

Your own dyer or finisher can Schollerize the fabric — the application of the process is so very simple, results so consistently uniform! INSIST UPON SCHOLLERIZE* — there's nothing "just as good".

*U. S. and Foreign Patents

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WASHABLE WOOL
SAFE TO TUB • SAFE TO RUB

Does your label say WASHABLE—and mean it? Your label can proudly proclaim "Shrink-Resistant Washable Wool—Safe to Tub, Safe to Rub"—if it's SCHOLLERIZED!

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Manufacturers of Scouring, Dyeing and Finishing Materials; Soaps, Softeners and Sulphonated Oils

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Schollerized Wool is BETTER Wool BECAUSE it's Schollerized!

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...Warp Sizes for Natural and Synthetic Fibers ...Starches, Dextrines, Gums and Resins for Finishing ...Printing Thickeners for All Types of Colors.

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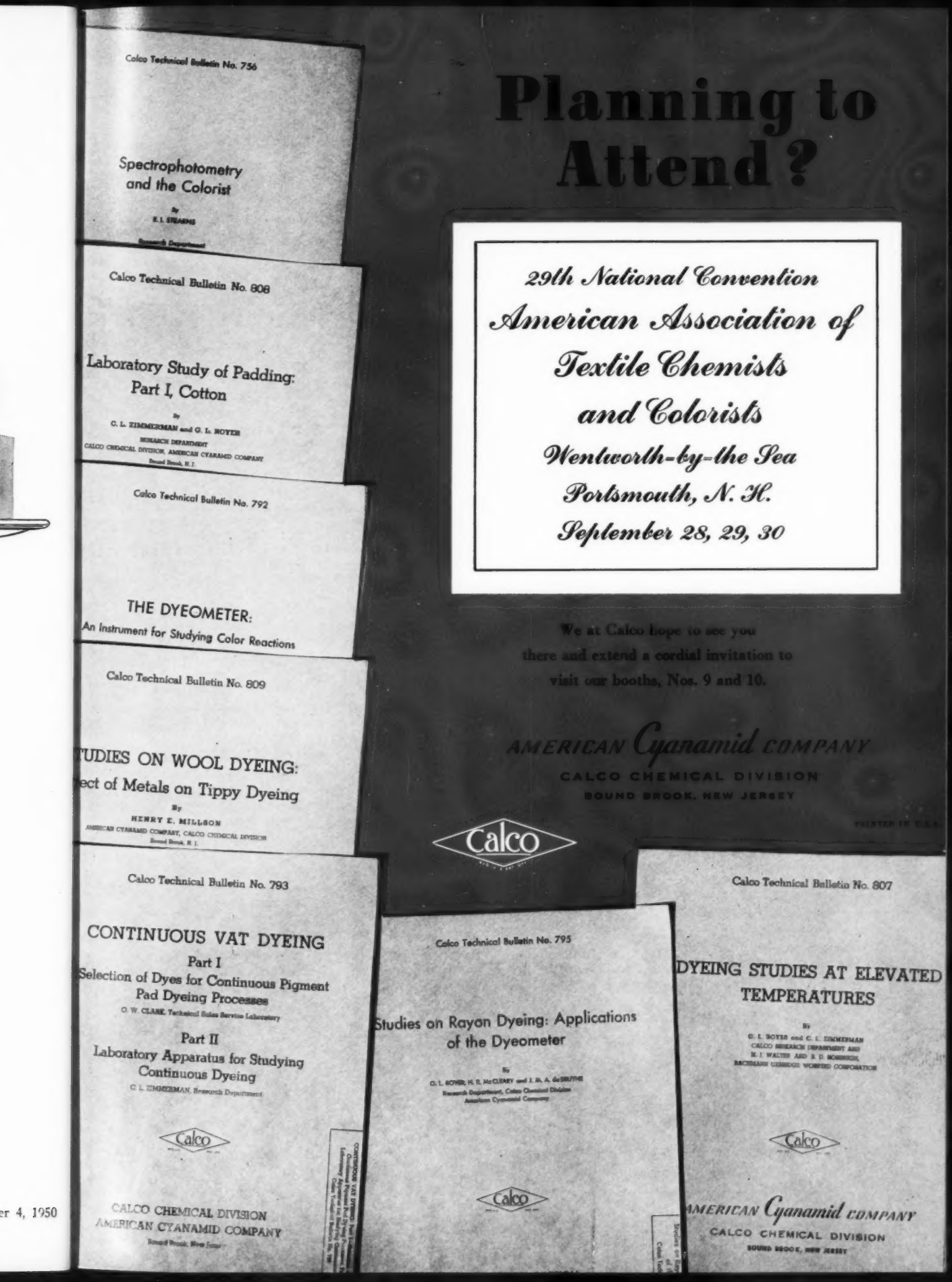
Calco Technical Bulletin No. 756
Spectrophotometry and the Colorist
Calco Technical Bulletin No. 808
Laboratory Study of Padding: Part I, Cotton
Calco Technical Bulletin No. 792
THE DYEOMETER:
An Instrument for Studying Color Reactions
Calco Technical Bulletin No. 809
TUDIES ON WOOL DYEING:
ect of Metals on Tippy Dyeing
Calco Technical Bulletin No. 793
CONTINUOUS VAT DYEING
Part I
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Part II
Laboratory Apparatus for Studying Continuous Dyeing
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AMERICAN CYANAMID COMPANY
Planning to Attend?
29th National Convention
American Association of Textile Chemists and Colorists
Wentworth-by-the Sea
Portsmouth, N. H.
September 28, 29, 30
We at Calco hope to see you there and extend a cordial invitation to visit our booths, Nos. 9 and 10.
AMERICAN Cyanamid COMPANY
CALCO CHEMICAL DIVISION
BOUND BROOK, NEW JERSEY
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DYEING STUDIES AT ELEVATED TEMPERATURES
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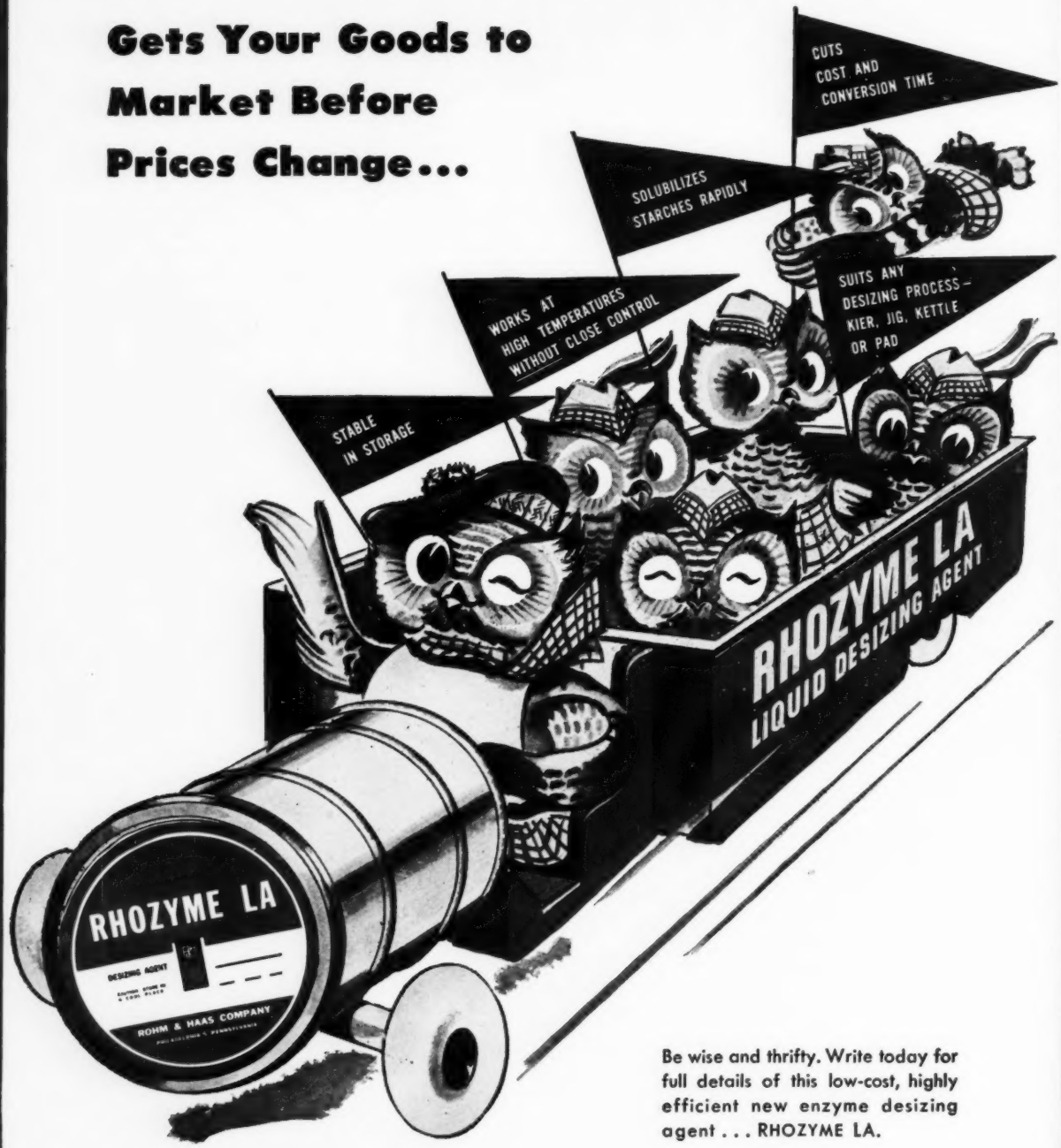
Gets Your Goods to Market Before Prices Change...


CUTS COST AND CONVERSION TIME
SOLUBILIZES STARCHES RAPIDLY
WORKS AT HIGH TEMPERATURES WITHOUT CLOSE CONTROL
SUITS ANY DESIZING PROCESS— KIER, JIG, KETTLE OR PAD
STABLE IN STORAGE
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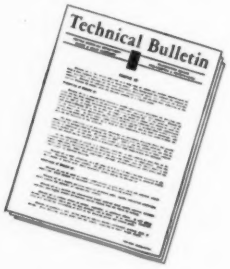
Be wise and thrifty. Write today for full details of this low-cost, highly efficient new enzyme desizing agent . . . RHOZYME LA.



CHEMICALS FOR INDUSTRY

ROHM & HAAS COMPANY

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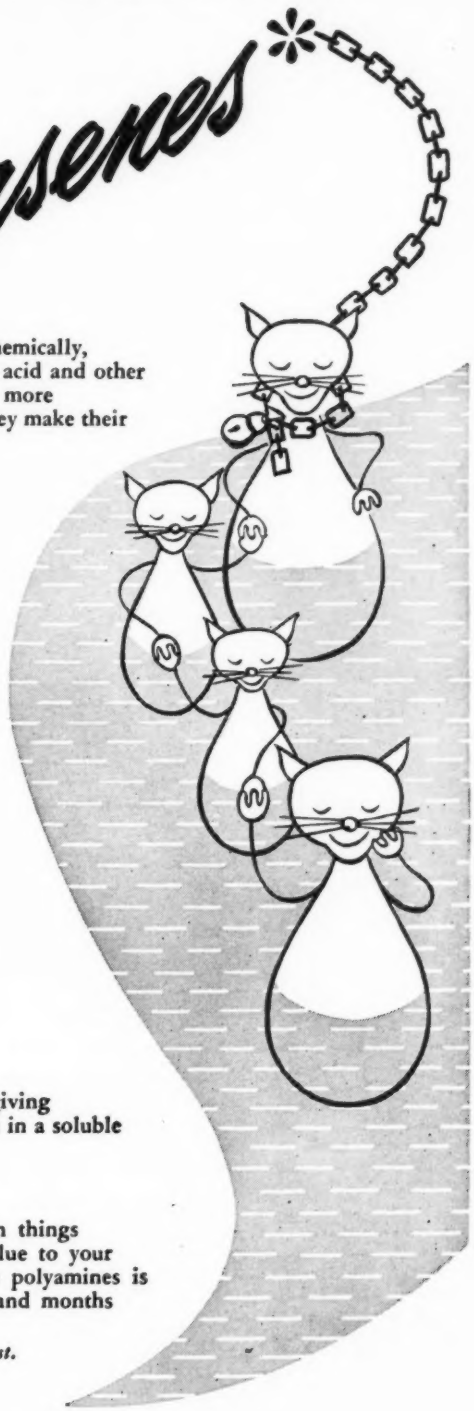
how to control cations in solution...

THE *Versenes*



WHAT THEY ARE

The Versenes are powerful organic complexing agents. Chemically, they are the sodium salts of ethylene diamine tetra acetic acid and other polyamino acids in liquid or powdered form. More and more process industries are taking advantage of them because they make their processes and products better at far less cost.

WHAT THEY DO

The Versenes* are extremely versatile and stable at high temperatures. Here are some of the things they do:

- *Soften water* without *precipitation.*
- *Complex ferric iron in up to 40% caustic solution.*
- *Prevent uneven and spotty dyeing of textiles.*
- *Inactivate* divalent *metals such as cobalt, copper, nickel.*
- *Inactivate* trivalent *iron, calcium, magnesium and other metallic salts.*
- *Remove hardwater deposits and precipitates.*
- *Dissolve grease and food deposits.*
- *Clarify liquid soap solutions.*
- *Prevent oxidation of fats, oils, soaps, fatty acids, organic materials.*
- *Stop reactions catalyzed by metallic ions.*
- *Aid in purification of materials.*
- *Separate metals from each other.*
- *Reduce activity of metal ions.*
- *Purify drugs.*
- *Stabilize color and maintain flexibility in plastics.*
- *Lower viscosity of starch and glue solutions.*
- *Provide an analytical reagent in Schwartzenbach method of water analysis.*

HOW THEY DO IT

The Versenes* do any or all of these things for you by giving you exacting chemical control of cations — keeping them in a soluble complex form.

WHAT TO DO ABOUT IT

Each Versene has a special application and does certain things better than others. This is why you should give us a clue to your problem. A generation of experience in pioneering the polyamines is yours for the asking. It can save you days and weeks and months of research.

Send for Technical Bulletin #2. Samples on request.
See Us At the Chicago Show Booth #61.

*Trade Mark

BERSWORTH CHEMICAL COMPANY

FRAMINGHAM, MASSACHUSETTS

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W. Coast Agent: Griffin Chemical Co., San Francisco, Los Angeles — Chicago Agent: Kraft Chemical Co., Inc., 917 W. 18th St., Chicago
George Mann, 251 Fox Point Blvd., Providence, R. I. — Wasatch Chemical Co., Salt Lake City, Utah
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FINISH CONTROL

is simple as A B C

with Profine

A

You'll revise all your previous ideas on controlling fabric or yarn finishing when you start using Profine. By varying the concentration of Profine solutions, you can "custom finish" fabrics to meet customers' demands. You can get the degree of softness, body or "hand" you want.

B

Profine applications are almost unlimited. You can use it in soaking baths, in dye becks, dolly washers, jig or package machines, in quetsches or padders.

C

In readily soluble flake form, Profine is self-emulsifiable. Emulsions are very stable, have no effect on shade, have no tendency to form objectionable odors or discoloration.

Profine definitely up-grades fabrics—greatly increases their saleability. It will pay you to use Profine.

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MAKERS OF OLATE, PROXOL AND ORVUS

Heyden FORMIC ACID and SODIUM FORMATE

FORMIC ACID (90% and 85%)

Available in 500 lb. stainless steel drums or 125 lb. carboys. For use in:

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A neutral and colorless crystalline powder which gives a clear solution in water and is especially suitable for use in the production of water-resistant wallpapers, in textile dyeing, in leather tanning and in a variety of other uses.

SHIPPED IN 300 LB. WATER-PROOFED FIBER DRUMS.

Samples and technical data sent promptly upon request on company letterhead.

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how NOPCO* FUA

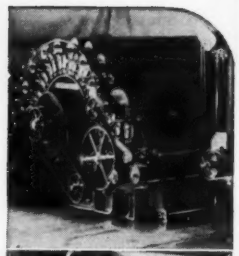
the modern self-fulling self-scouring wool oil adds up to better wool processing at less cost

Carding

Nopco FUA assures:

- Excellent fiber lubrication
- Elimination of static and fly
- No gumming of cards
- Elimination of glazing on leather rub roll aprons
- Cushioning of the leather

Result: Better carding—higher production—loftier, rounder roving

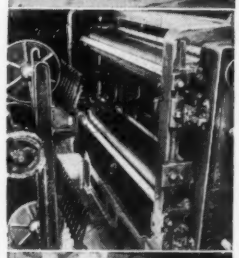


Spinning

Nopco FUA assures:

- Improved spinning—on mules or frames
- Fewer broken ends—because of increased yarn strength

Result: Higher spinning production

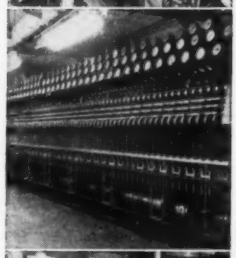


Steaming

Nopco FUA

- does not set in the yarn after steaming, nor in the fabric when greige goods are crabbed.

Result: No cloudy, shady piece dyeing

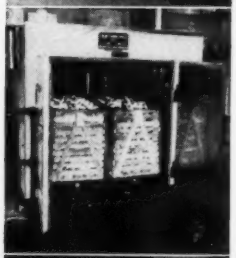


Fulling

Nopco FUA assures:

- Superior fulling (with excellent sudsing action) without addition of soaps or detergents
- Quick, uniform shrinkage—with good cover

Result: Simpler, improved fulling

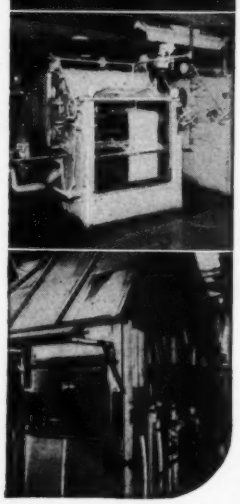


Scouring

Nopco FUA assures:

- Ultra-efficient scouring—again without addition of soaps or detergents
- Shorter rinsing time
- Very low residual oil content (0.2%)

Result: Better, faster scouring



No other wool oil duplicates the many advantages of Nopco FUA

Send for full information today.

NOPCO TRADEMARKS EVOLVED THRU RESEARCH

NOPCO CHEMICAL COMPANY

Formerly National Oil Products Company

HARRISON, NEW JERSEY

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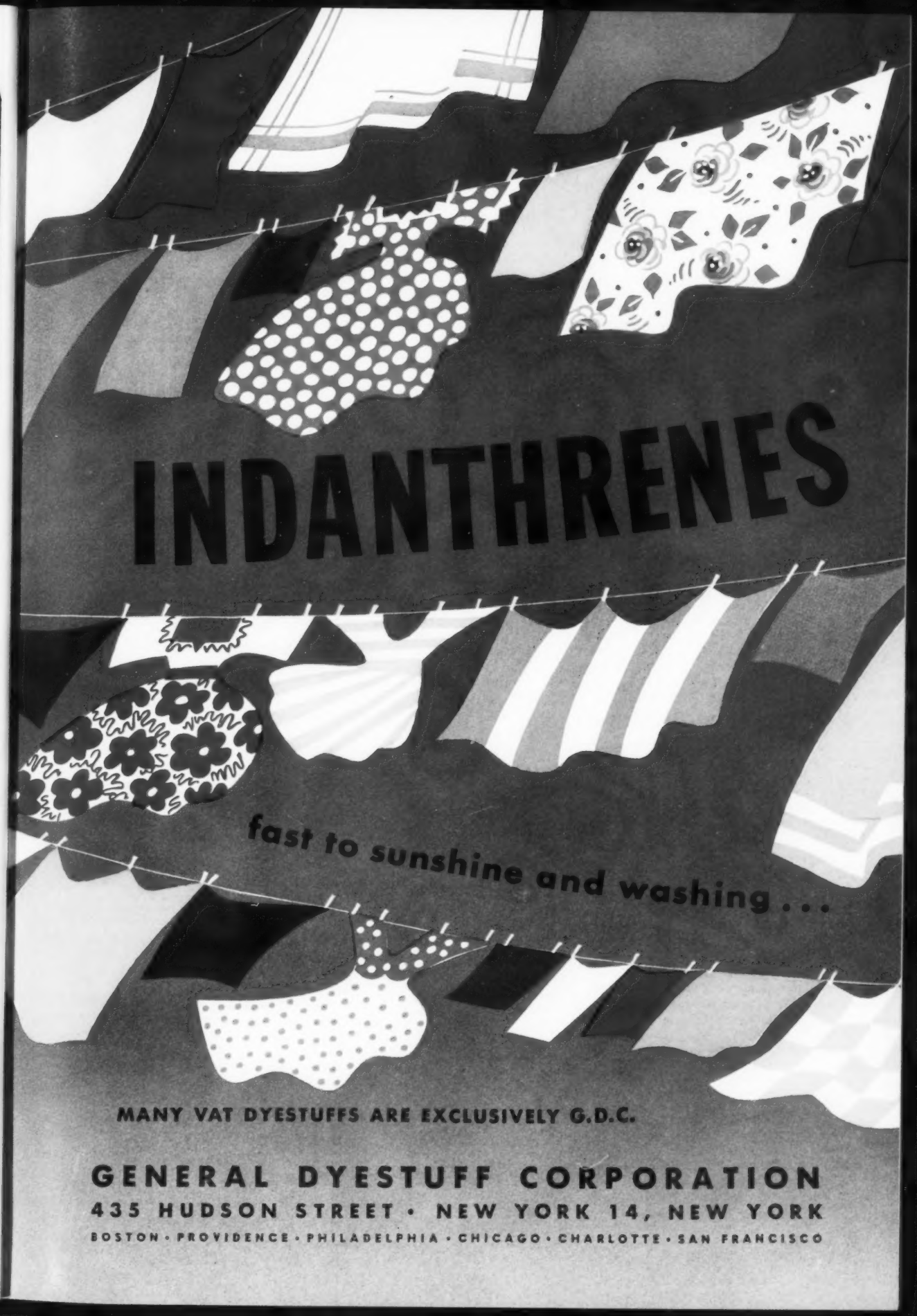
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fast to sunshine and washing . . .
MANY VAT DYESTUFFS ARE EXCLUSIVELY G.D.C.
GENERAL DYESTUFF CORPORATION
435 HUDSON STREET • NEW YORK 14, NEW YORK
BOSTON • PROVIDENCE • PHILADELPHIA • CHICAGO • CHARLOTTE • SAN FRANCISCO

LIXATE BRINE IMPROVES QUALITY OF DYEING

To improve the quality of finished goods by eliminating spots, streaks, and white edges many mills now use saturated Lixate brine in the dye bath instead of dry salt.

When dry salt is added it has a tendency to create areas of concentrated brine around the grains of salt, and these drive excessive quantities of dye into fabrics and cause spots and streaks. Because Lixate brine disperses evenly and immediately through the bath, it helps to eliminate this difficulty and to produce a smooth exhaustion of the dye.

Results at mills that have recently changed from dry salt to Lixate brine indicate that in addition to helping to eliminate re-dyes and achieve greater uniformity of shades, use of Lixate brine also increases plant efficiency and reduces operating costs as well. Because brine is made automatically and piped throughout the plant, the Lixator cuts salt consumption, and also eliminates the work of unnecessary salt handling.

An engineering development of the International Salt Company, Inc., Scranton, Pa., the Lixator consists of a rock salt storage hopper over a dissolving tank with a brine collection chamber. Rock salt flows by gravity into the tank at the same rate it is dissolved, automatically replenishing the supply. Water enters near the top. As water flows downward, it dissolves the rock salt until it becomes fully saturated some distance from the bottom of the tank. From that point on the remaining rock salt acts as a filter bed that removes all insoluble matter from the brine. As a result, when it reaches the collection chamber, the brine is crystal clear and fully saturated.

Many mills report that when they use Lixate brine in the dye bath they use approximately 12 per cent less salt than they did when they added dry salt to the bath. This is because saturated brine is more efficient as the exhausting agent than when dry salt is used directly in the machines. One gallon of saturated brine contains 2.65 pounds of salt but when used as the exhausting agent, one gallon of saturated brine appears to be equivalent to three pounds of dry salt. This is the figure used for best dyeing results by actual experience.

Lixate brine is always crystal clear and neutral—free from acids and alkalies—and for that reason is also used to regenerate zeolite water softeners. The same Lixator provides saturated brine for this purpose as well as for use in the dye vats. Lixators may be made in any size to meet individual plant requirements.

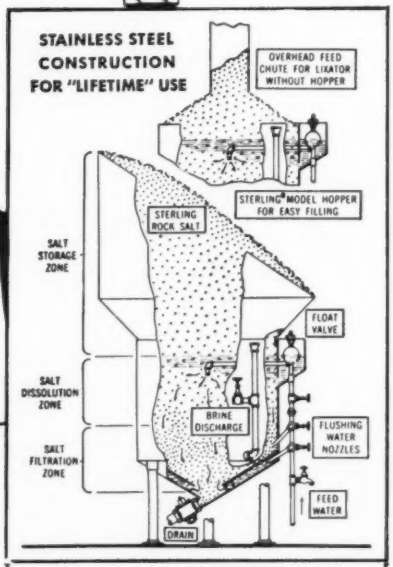
JUST TURN IT

AND GET

BRINE

That's Just Right Without Measuring Or Stirring!

STERLING ROCK SALT
BRINE DELIVERED BY PIPE
TO EVERY POINT IN YOUR PLANT
- **DYEING MACHINES**
- **DYEING VATS**
- **ZEOLITE WATER SOFTENERS**



• Why trust to "rule-of-thumb" measuring? Why go through the laborious shoveling, hauling, and hand stirring of salt and water? With International's Lixate Process for Making Brine you are assured accurate salt measurement every time. Stops waste through spilling. Saves time and labor.

• The Lixator *automatically* produces 100% saturated, free-flowing, crystal-clear brine which may be piped to as many points in your plant as you wish — any distance away — by gravity or pump. YOU SIMPLY TURN A VALVE to get self-filtered LIXATE Brine that meets the most exacting chemical and bacterial standards.

Savings up to 20% and often more in the cost and handling of salt have been reported by many Lixate users. Why not investigate?

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- ✓ **Unvarying salt content of 2.65 pounds per gallon of brine.**
- ✓ **Crystal-clear brine.**
- ✓ **Continuous supply of brine.**
- ✓ **Automatic salt and water feed to Lixator.**
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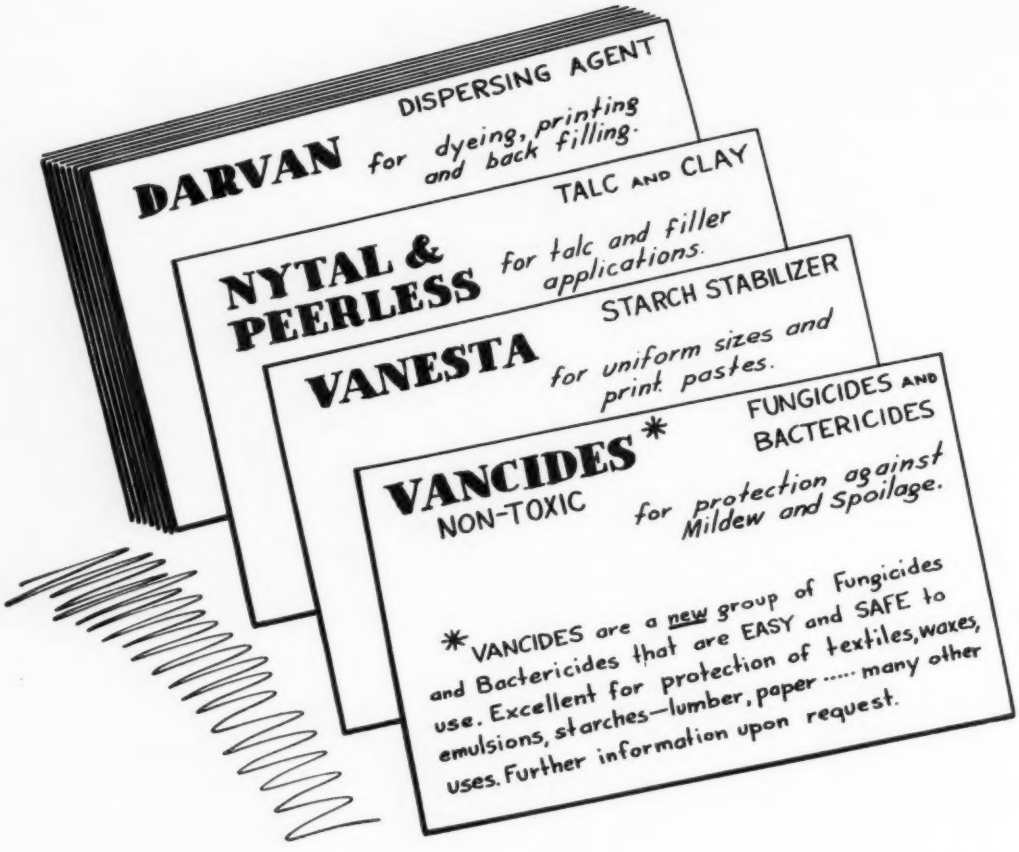
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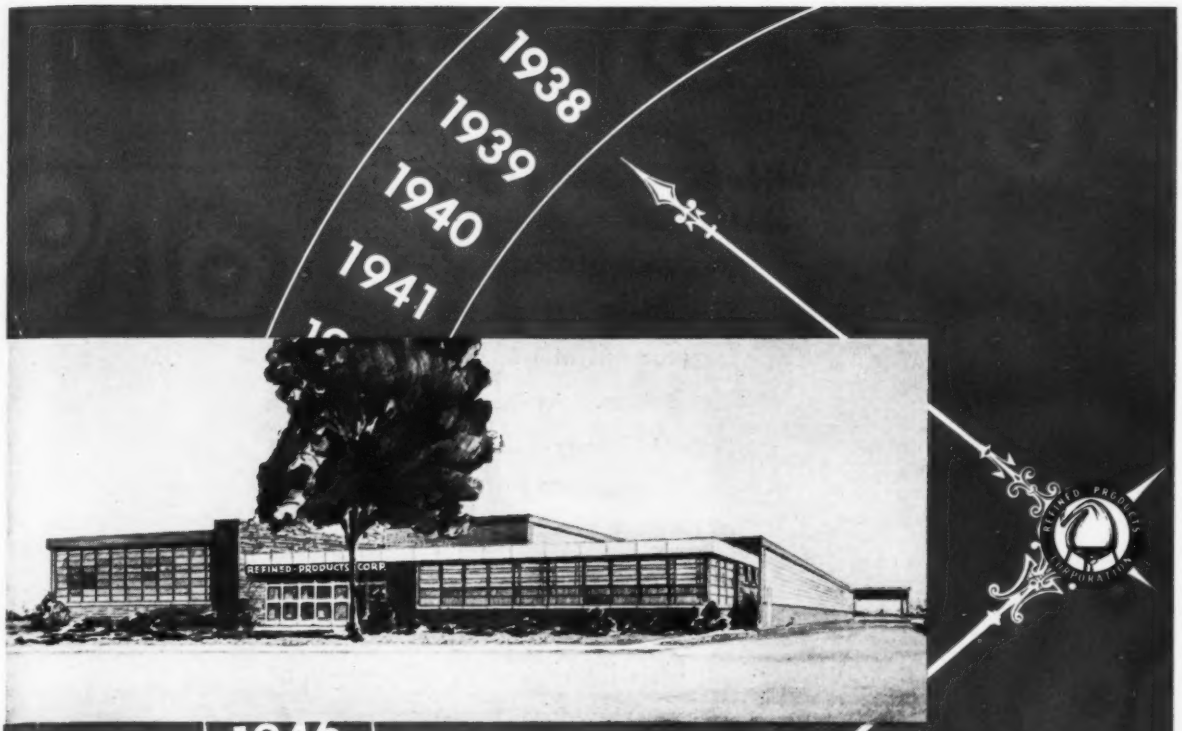

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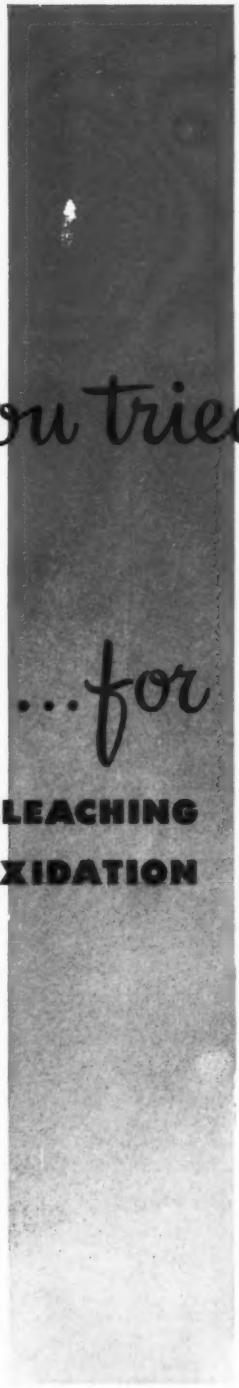

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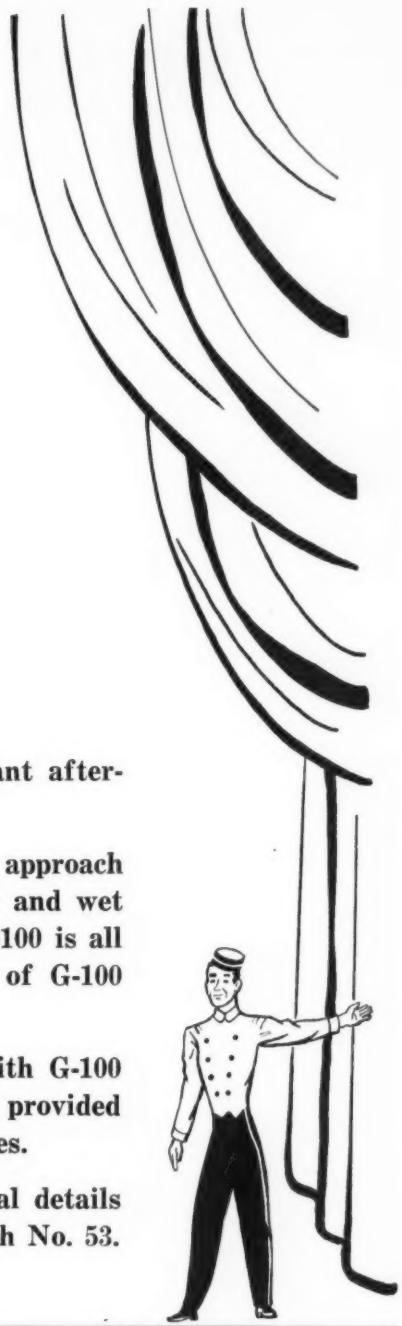

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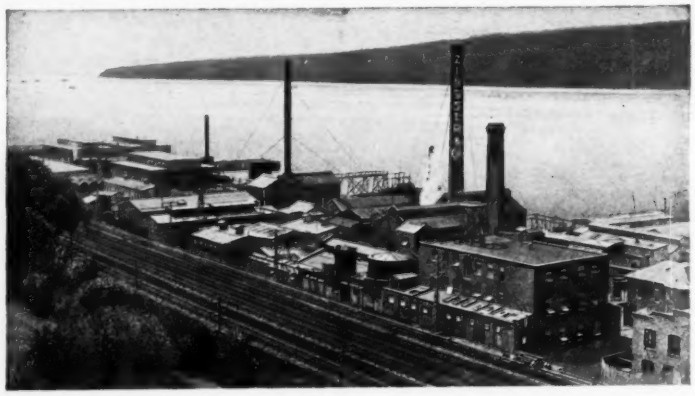

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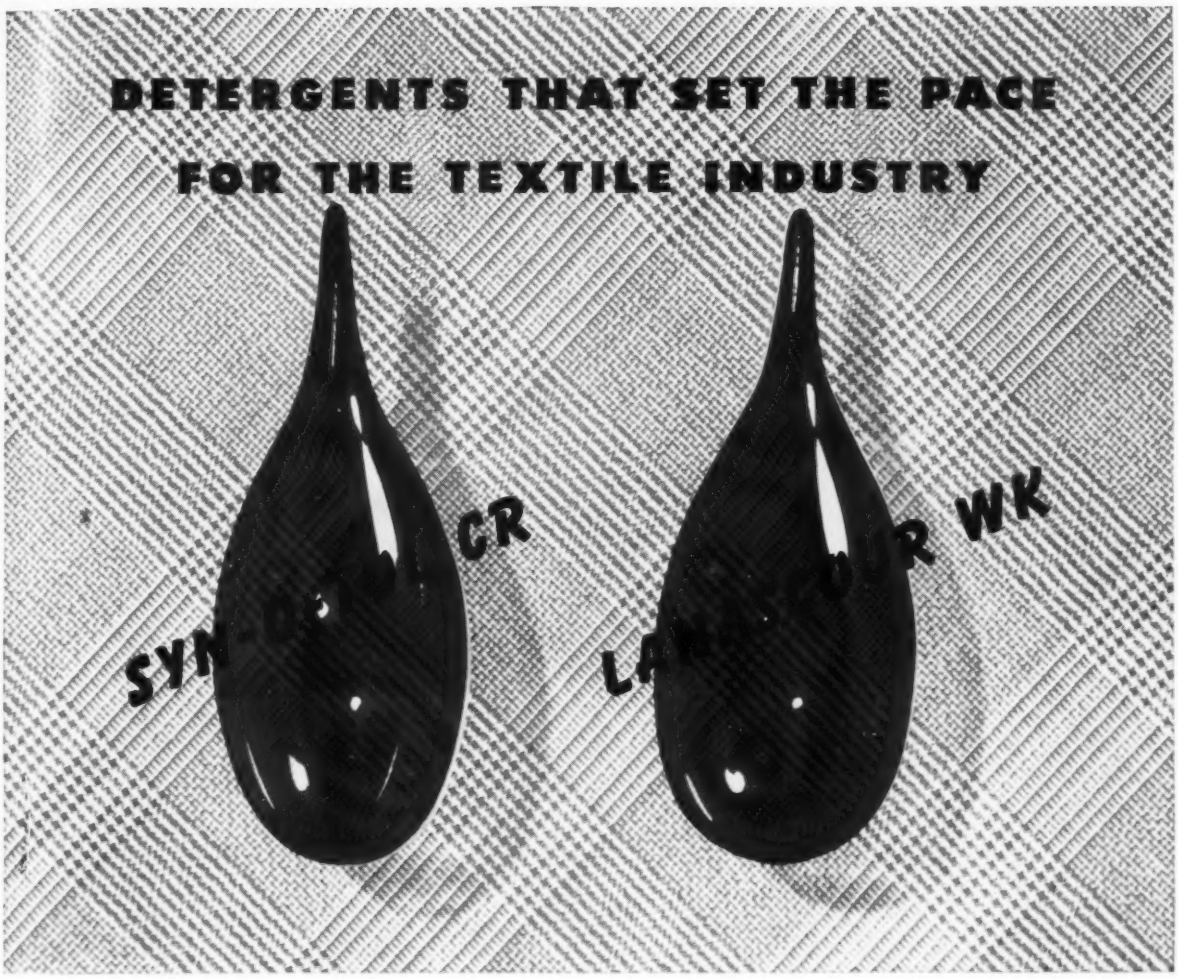

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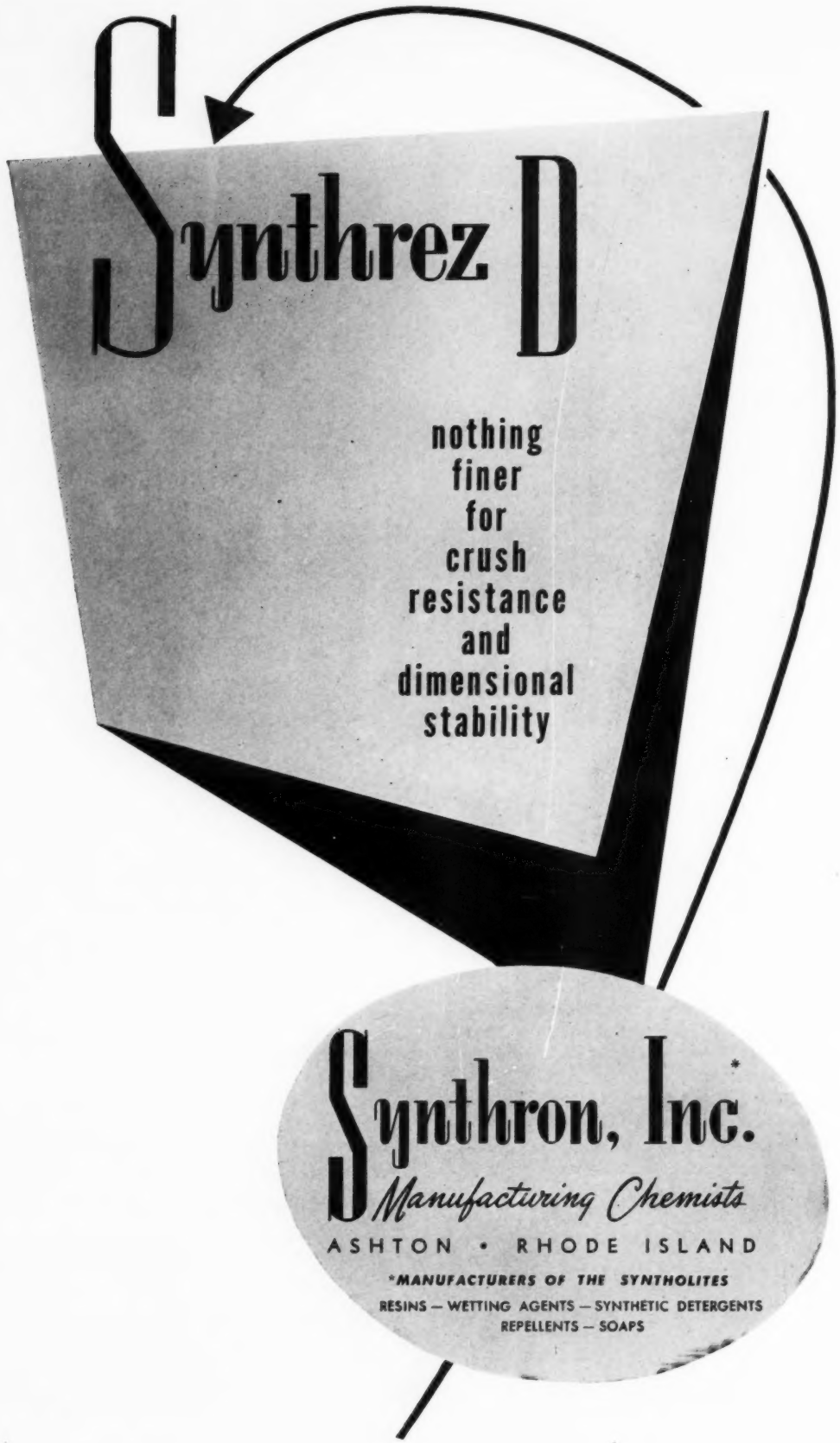
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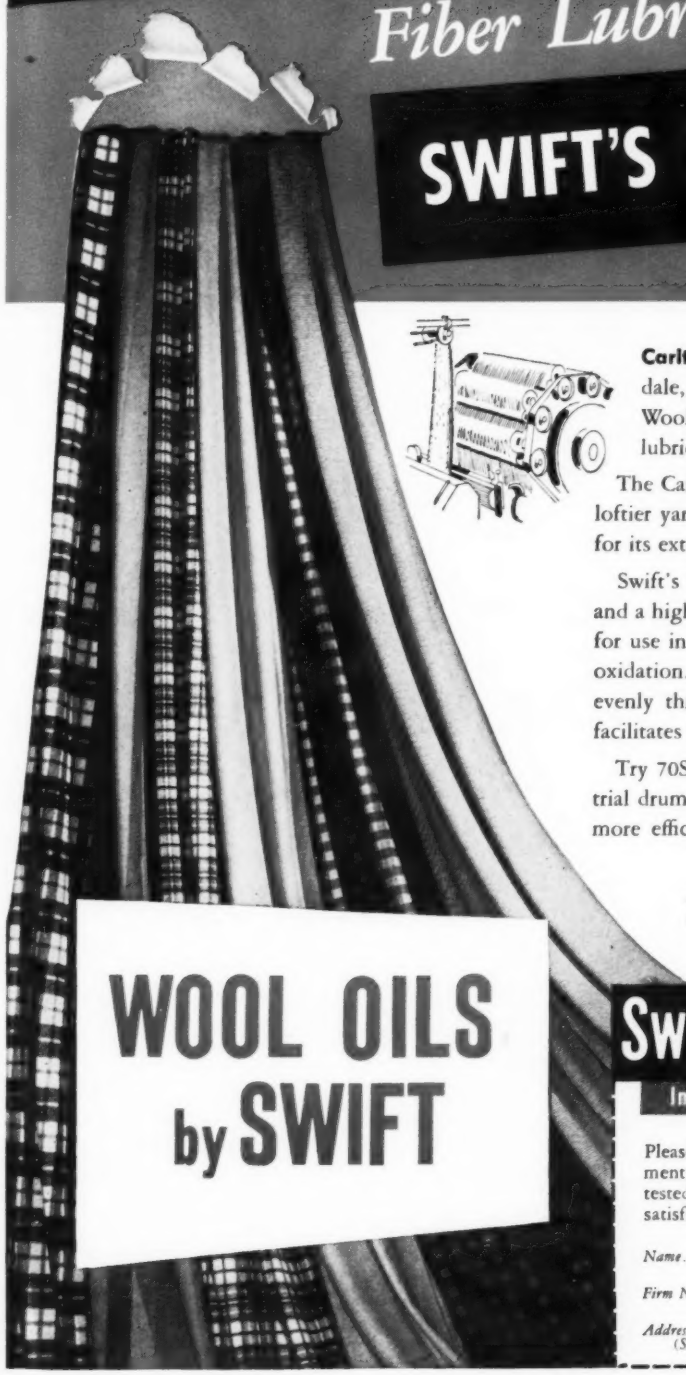

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Please send me your 55-gallon drum introductory trial shipment of Swift's Wool Oil 70S at the quantity price, to be tested for use in our operations. We understand if not fully satisfactory, it may be returned for credit at your expense.

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Firm Name.....

Address.....
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Hydrozin

PEAK PERFORMANCE in STRIPPING and DISCHARGING ACETATE, WOOL and NYLON

For all-around efficiency and economy in stripping and discharging acetate, wool and nylon fibres, you can be assured of top performance with HYDROZIN ($ZN(HSO_2.CH_2O)_2$) . . . a clear-dissolving, soluble zinc formaldehyde sulfoxylate.

It is Economical—Because of its stability and strength, only a small percentage is required for best results.

It is Versatile—Effective on a wide range of dyestuffs, HYDROZIN produces a whiter ground and assures better color values.

For top performance in stripping and discharging acetate, wool and nylon, use HYDROZIN.

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($NaHSO_2 \cdot CH_2O \cdot 2H_2O$)

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HYDROSULFITE OF SODA CONC.
($Na_2S_2O_4$)

For reduction of vat colors in dyeing, stripping, etc., our stabilized, maximum concentrated for strength and purity

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JACQUES WOLF & CO.
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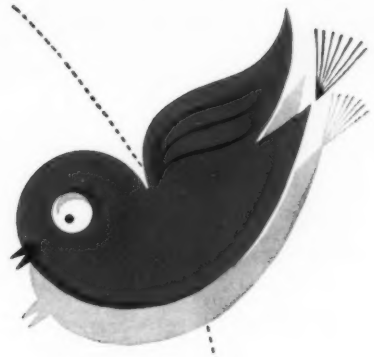
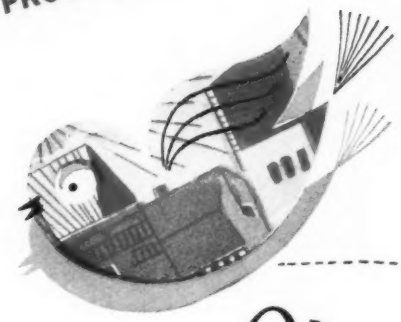
National
STARCH PRODUCTS





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AATCC CONVENTION
BOOTH 46

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Without Aftertreatment!

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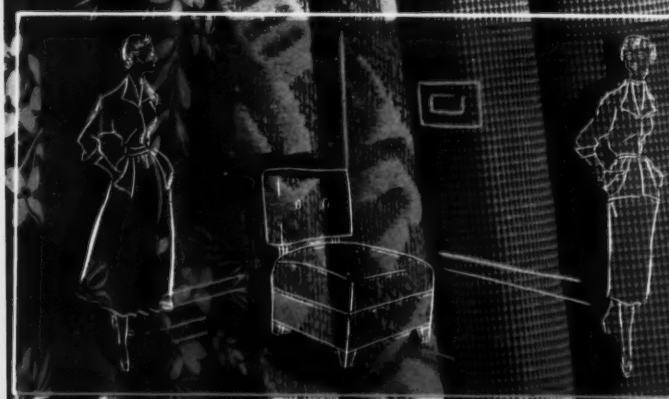

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A.A.T.C.C. CONVENTION ISSUE

AMERICAN

DYESTUFF REPORTER

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Official Publication of the Proceedings of the American Association of Textile Chemists and Colorists

•

American Dyestuff Reporter was founded in 1917 and the Textile Colorist and Converter (formerly Textile Colorist) was incorporated with it in January, 1949. Published every other Monday by the **HOWES PUBLISHING COMPANY, INC., 44 E. 23rd Street, New York 10, N. Y. C. R. Howes,** President; **Harry F. Crawford,** Executive Vice-President; **Norman A. Johnson,** Vice-President; **Ernest J. Finan,** Treasurer; **Myron D. Reeser,** Secretary; **C. Essenbreis,** Assistant Secretary.

•

Also Publishers of
HOSIERY INDUSTRY WEEKLY
HOSIERY MERCHANDISING

•

SEPTEMBER 4, 1950
VOLUME 39 NUMBER 18

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pace-setter in precision dye-making

Proceedings of the
American Association of Textile Chemists and Colorists

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SEPTEMBER 4, 1950

NATIONAL CONVENTION • PORTSMOUTH • SEPTEMBER 28-30

Greetings
FROM YOUR PRESIDENT

C. NORRIS RABOLD
National President

Dear AATCC Member:

It has become the pleasant custom over the years for your President to invite all of his fellow members to attend the Annual Meeting. Following this custom, I am most happy to extend to you a cordial invitation to attend the 1950 Annual Convention to be held at Wentworth-by-the-Sea, on September 28th, 29th and 30th. I hope many of you will avail yourselves of this opportunity to meet together. These meetings provide a means for the making of personal contacts and friendships which are of inestimable value, not only to the individual but also to the organization as a whole.

At an Annual Meeting one has the opportunity to meet and exchange ideas with others from various parts of the country and various sections of our industry. Thus, fresh ideas and new thoughts are developed which materially aid each and everyone. Members will meet the National Officers of the Association and can attend sessions of the National Council and Research Committee. You are especially invited to attend both the Council and Research Committee meetings, for here you will see your representatives conducting the administrative and technical affairs of our Association.

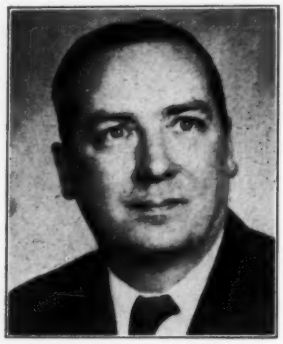
Each year it has been said that our Annual Conventions have become bigger and better. The fact that we have more attendance is evidence of the interest everyone is taking. The fact that we have a better meeting is evidence of the sincere work on the part of those Sections who have conducted each Annual Meeting. Over the years our National Convention Committee has accumulated data which has been of benefit to the Local Convention Committee conducting the meeting. Therefore, we have continued to step upward on each other's shoulders.

Last year at Atlantic City those who attended were impressed by the excellence of the technical papers presented. They were also equally impressed by the large number of exhibits. This year one again has opportunity to witness the latest developments from our own research laboratories, in the way of testing equipment and improvements in former test methods. Complementing our exhibit will be the latest developments shown by others in the way of new dyes, chemical processes and equipment for both laboratory and plant.

Our host, the Rhode Island Section, has arranged a splendid meeting. An individual can only return from a meeting of this sort filled with enthusiasm for his industry and with a better knowledge and feeling for the Association that has made possible such a get-together. Let's make it a success by a full attendance.

Sincerely yours,

C. NORRIS RABOLD,
President.



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Chairman, National Membership and Local Sections Committee
Member, National Intersectional Contest Committee

HAROLD C. CHAPIN
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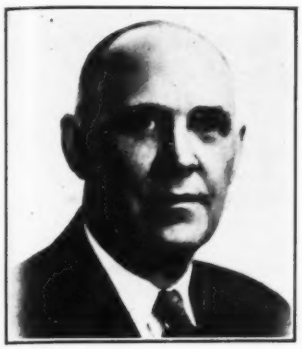


GEORGE H. WOOD
General Convention Chairman

Greetings

FROM THE CONVENTION CHAIRMAN

"Historic New England Awaits You"

THE Rhode Island Section, as hosts for the 29th National Convention of the AATCC, extends greetings to all members and hopes to have the privilege of welcoming you and your guests in Portsmouth, New Hampshire, on September 28, 29, and 30.

The Convention Committee believes that all who attend will enjoy not only the excellent technical program, but also the unsurpassed recreational facilities of Portsmouth and the surrounding countryside.

An exhibit is planned with sixty-five exhibitors, covering over 10,000 square feet, including the AATCC, textile schools, and companies interested in the textile industry. The various sections of our association have always united to make the Annual Convention a success, and it is the desire of the Convention committees that the 1950 Convention will prove to be informative and pleasant, and that it will usher in a period of "Advancement, Achievement, Through Continued Cooperation."

GEORGE H. WOOD,
General Convention Chairman

Greetings

FROM THE CHAIRMAN, RHODE ISLAND SECTION

ELLIOT BROADBENT
Chairman, Rhode Island Section

THE Rhode Island Section extends a sincere invitation to all members of the AATCC to attend the 29th National Convention at Portsmouth, New Hampshire, September 28, 29, and 30. The Convention cannot be held in our own beautiful state of Rhode Island because of the lack of adequate facilities. However, we are certain that we can make you comfortable and happy at Portsmouth, New Hampshire. The Headquarters Hotel, Wentworth-By-The-Sea, is one of the most famous hotels on the northeast coast. The Marshall House and the Emerson are also justly famous for their location and accommodations. These hotels are located in delightful surroundings and adjacent to several excellent golf courses.

The town of Portsmouth is filled with historic interest. If you have never visited this section of New England, a pleasant adventure awaits you. You will be thrilled by the rare combination of seashore and countryside. The ladies will find this locality particularly interesting: antique shops, old colonial houses, fishermen's docks all vie for milady's interest.

We want to be sure that all members participate in the technical programs which we believe will be extremely interesting. We also have a wide variety of exhibits which will be displayed in a separate hall convenient for this purpose.

We believe that you will remember the Rhode Island Section as an outstanding Convention host.

I send you my good wishes and look forward to seeing you at Portsmouth.

ELLIOT BROADBENT,
Chairman, Rhode Island Section

CONVENTION INFORMATION

CONVENTION HEADQUARTERS

THE Wentworth-By-The-Sea, headquarters for the Convention, together with the other conveniently located hotels, have excellent facilities for housing, meeting rooms and social activities. A separate Exhibition Hall is available for the exhibits.

INFORMATION

A card index file is maintained at the Registration Desk in the main lobby of the Wentworth. Full information as to name, hotel, room number, etc. of all persons attending the Convention is readily available there.

Various committees have desks in the main lobby of the Wentworth where information can be obtained. The committees so represented are: Transportation, Entertainment, and Ladies.

Inquiries regarding meals, eating places, registration and reservations should be made at the Registration Desk.

All questions regarding exhibits should be made at the Exhibits Committee desk in the Exhibition Building.

The Convention Committee and Press have offices in the Wentworth.

Representatives of all committees are located in each convention hotel. They can be reached through the main hotel desk.

MEALS

Meals will be served during the Convention as follows:

Rockingham Hotel—All regular meals.

Wentworth-By-The-Sea — All regular meals except that on Thursday and Saturday evenings the banquets will require all available facilities.

Emerson Hotel—No meals served.

Marshall House—Breakfast and lunch served but no evening meal.

There will be two New England clambakes served during the Convention. One clambake is scheduled for noon on Friday, and the second at noon on Saturday.

Various public eating places where famous New England seafood and other meals are served are available as follows:

Folsom-Salter House—An early Colonial Home with excellent cuisine serving evening meals.

Warren Lobster House—A noted restaurant for lobster dinners on the picturesque banks of the Piscataqua River between Maine and New Hampshire.

Jarvis Restaurant—Excellent food reasonably priced. Excellent for a quick lunch or a sandwich. This restaurant will remain open until 3:00 a.m. on Thursday, Friday and Saturday night to accommodate late diners.

Snack Bar in the Exhibition Hall at Wentworth-By-The-Sea—Sandwiches, coffee, etc.

Snack Bar in the Wentworth-By-The-Sea—Sandwiches, coffee, ice cream, etc.

Cocktail Lounges—Wentworth-By-The-Sea (two), Rockingham and Marshall House.

BANQUET SPEAKER

The Honorable Harold G. Hoffman, formerly Governor of the State of New Jersey, will give the principal addresses at the 29th Annual Banquet on Saturday, September 30, 1950. The Committee has obtained a man of renown in national and international affairs. The speaker will present a message of interest and importance to everyone present.

TECHNICAL PROGRAM

The Convention Committee has arranged an excellent Technical Program. Serious consideration was given to the interests of the various persons attending

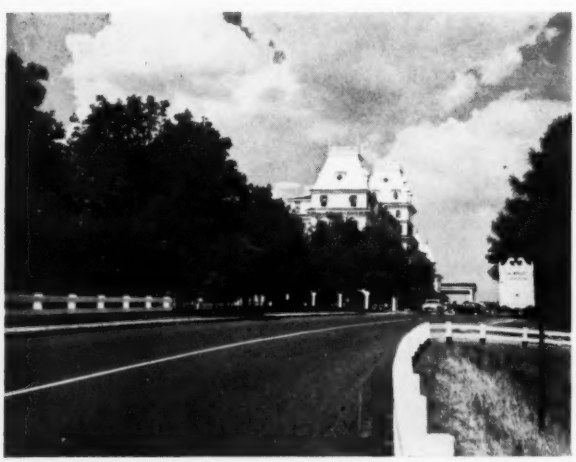


Photo by Kenneth C. Everett

Photo by Kenneth C. Everett

Two views of the Wentworth-by-the-Sea

the Convention in arranging this program. It is believed that the subjects to be presented are of vital interest to the textile and allied industries.

LADIES PROGRAM

Members of the Ladies Committee will be available at the Registration Headquarters at the Wentworth-By-The-Sea to assist the ladies whenever possible. The ladies who register are invited to attend the dinners, luncheons, and technical sessions, in addition to the following special events that have been provided for their entertainment: tea and cocktail party, banquet including door prizes, visit to mill and salesroom—Goodall-Sanford Company, sightseeing trips around historic New England, fashion show—Bates Manufacturing Company, and recreation, including golf, putting, tennis, swimming, boating and fishing.

The ladies are invited to join the men at the clambake, dinner and entertainment Friday evening, and the visit to the Navy Yard.

RECREATION

Facilities are available for Golf, Tennis, Bathing, Boating and Deep-Sea Fishing.

There is a nine hole golf course at the Wentworth-By-The-Sea, as well as a nine hole chipping course and an eighteen hole putting green.

In addition to the course at the Wentworth-By-The-Sea, there are three fine eighteen hole courses within a radius of 15 miles from the convention hotel. These courses are the Portsmouth Country Club, the Abenaqui Golf Club, and the York Golf and Tennis Club. Also, the Goodall Country Club, a sporty nine hole layout in Sanford, Maine, is only a 40-minute drive from Portsmouth. All these courses will be available for our AATCC members and guests. Greens fees are very reasonable.

The golf course at Wentworth-By-The-Sea is not a difficult course, but neither is it a pushover. It is 3004 yards and par 35. On this course it is important to be an accurate golfer rather than a long hitter.

The next nearest club to the convention hotel is the Portsmouth Country Club. It is a five-mile drive from the Wentworth. The Portsmouth Country Club offers a 3143 yard par 36 front nine and a 2627 yard par 34 back nine. It is a very interesting course and although the back nine has no par five holes, it is replete with hazards such as trees, water, and sand. In other words, bring only those clubs which hit the ball straight where you aim it.

The Abenaqui Golf Club is eight miles from the Wentworth. It is an 18 hole layout which is on rather flat terrain and offers golf with a maximum of walking ease. The front nine is 3093 yards par 36 and the back nine is 2440 yards par 33. It may be said that your lowest golf scores should be obtained at the Wentworth-By-The-Sea and Abenaqui.

The York Golf and Tennis Club is 15 miles from the Wentworth. It is the longest course in the convention area with a 3079 yard par 35 front nine and a 3124 yard par 35 back nine. It is a challenging course with real sport in its inclined fairways and greens.

For those who want to bolster their ego and really enjoy the convention, we recommend the golf at Wentworth-By-The-Sea and Abenaqui. For those who want to test their self-control and who like to find themselves in situations which make them wonder why they ever took up the game, we recommend the golf at the Portsmouth Country Club and the York Golf and Tennis Club. We have observed that the greens at all these courses are in excellent shape at this time.

There is a problem in connection with caddies. Since many of the boys will be in school on the Thursday and Friday of our convention, there may be a shortage of caddies on those two days. However, we have been advised that if we can estimate how many of our golfers are likely to play at these courses during the convention, efforts shall be made to provide the necessary caddies. Therefore, if you plan to play golf, will you please write to that effect to James R. Redmond, Interchemical Corporation, P. O. Box 555, Pawtucket, Rhode Island, immediately so that a proper estimate may be prepared.

These clubs offer only soft drink facilities and set-ups at the 19th hole, so if this is an important feature of your particular golf game, you had better bring your own essential ingredients!

Wentworth-By-The-Sea maintains championship tennis courts which will be able to take care of most of the tennis enthusiasts.

There are also some excellent courts at the York Country Club which are open to those attending the convention.

The heated swimming pool at the Wentworth-By-The-Sea will be kept open and dressing rooms are available in the "Ship."

For anyone desiring ocean swimming, we recommend Marshall Beach and Wallis Sands.

Facilities for boating and deep sea fishing are available for all and there is no scarcity of pleasure and fishing craft. The boats are moored at the Wentworth Pier and will leave at the pleasure of the guests.

Further information concerning any of these activities may be obtained at the Entertainment desk in the lobby of the headquarters hotel.

The Convention Theme

At this mid-century point we pause to look backward and forward. The last half-century witnessed the founding, and growth to maturity, of the AATCC. It also saw a greater development in textile processing than any corresponding period. At the start of this century, most information about the various phases of finishing operations was a jealously guarded secret. Under such conditions little progress could be made. A thought shielded in one mind suffers from a lack of variety in viewpoint. The greater number of lights focused upon a subject from various angles, the more the shadows disappear until there is complete illumination.

The old saying "two heads are better than one" always holds true. With the free exchange of ideas in our Association, with the untiring efforts of our members to acquire and disseminate knowledge, we have made a substantial contribution to the advancement and achievements of the last half-century. Of this we can all be proud. We cannot, however, just take pride in the past. The greatest value will come if it instills in us a feeling of confidence as we look forward. We face the new half-century firm in the belief that there will be "Advancement, Achievement, Through Continued Cooperation."

Program

29TH NATIONAL CONVENTION, PORTSMOUTH, N. H.

September 28, 29, 30, 1950

AUSPICES OF RHODE ISLAND SECTION

Headquarters: Wentworth-by-the-Sea

GENERAL PROGRAM

Thursday, September 28

REGISTRATION—8:00 A.M.-7:30 P.M.

NATIONAL COUNCIL MEETING — 10:00 A.M.

EXHIBITS—1:00-9:00 P.M.

PERSONNEL OFFICE—2:00 P.M. - 5:00 P.M.

LADIES TEA AND COCKTAIL PARTY —3:00 P.M.-5:00 P.M. (Flamingo Room)

GENERAL TECHNICAL SESSION—2:00 P.M.-5:00 P.M. (Ballroom)

ANNUAL BUSINESS MEETING—5:00 P.M.

LADIES BANQUET—7:00 P.M. (Rockingham)

CORPORATE MEMBER AND OLNEY AWARD BANQUET—6:30 P.M. (Informal)

Friday, September 29

BREAKFAST MEETINGS—
Corporate Membership Committee—8:00 A.M.
Research Advisory Committee — 8:00 A.M.

REGISTRATION—9:30 A.M.-7:30 P.M.

PERSONNEL OFFICE—
9:00 A.M.-12:00 Noon—1:00 P.M.-5:00 P.M.

EXHIBITS—10:00 A.M.-9:00 P.M.

COTTON GROUP MEETINGS — 9:00 A.M.-12:00 Noon (Ballroom)

WOOL GROUP MEETINGS—9:00 A.M.-12:00 Noon (Theatre)

LADIES — GOODALL-SANFORD TRIP OR HISTORICAL TOURS—9:00 A.M.

CLAM BAKE—12:00 Noon.

INTERSECTIONAL CONTEST—2:00 P. M.-5:00 P.M. (Ballroom)

LADIES SPECIAL FEATURE—3:00 P.M. (Theatre)

DINNER at Wentworth-By-The-Sea—6:00 P.M.-8:00 P.M.

ENTERTAINMENT at Wentworth-By-The Sea—
8:30 P.M. (Theatre)—9:15 P.M. (Ballroom)

Saturday, September 30

SYNTHETIC GROUP MEETINGS—9:00 A.M.-12:00 Noon (Ballroom)

AUXILIARY-TESTING GROUP MEETINGS—9:00 A.M.-12:00 Noon. (Theatre)

PERSONNEL OFFICE—9:00 A.M.-12:00 Noon

LADIES HISTORICAL TOURS—9:00 A.M.

REGISTRATION—9:30 A.M.-7:00 P.M.

EXHIBITS—10:00 A.M.-3:00 P.M.

CLAM BAKE—12:00 Noon

NAVY YARD TRIP—2:00 P.M.

The proposed trip to the Navy Yard Saturday afternoon, September 30, will be contingent upon security regulations which will be in force at the time. Due to the international situation, it may be necessary to eliminate this feature of the Convention program.

29th ANNUAL BANQUET—7:00 P.M. (Informal)

TECHNICAL PROGRAM

Thursday, September 28

2:00 P.M.-5:00 P.M.

GENERAL TECHNICAL MEETING—Ballroom—Wentworth-By-The-Sea
Dr. W. George Parks, *Presiding.*
Rhode Island State College
Kingston, Rhode Island

2:00 P.M. "Water Pollution Problem"
Lyman Cox
Engineering Department
E. I. duPont deNemours & Co., Inc.
Wilmington, Delaware.

3:00 P.M. "Economics of the Textile Industry"
D. H. Angney
Research and Statistics Department
Federal Reserve Bank of Boston
Boston, Massachusetts.

4:00 P. M. "A Business Approach to Consumer Standards"
Thomas C. Blaisdell, Jr.
Asst's Secretary U. S. Dept. of Commerce
Washington, D. C.

Friday, September 29

9:00 A.M.-12:00 Noon

COTTON GROUP MEETING—Ballroom
Dr. Peter G. Kolupaev, *Presiding*
Slatersville Finishing Company
Slatersville, Rhode Island

9:00 A.M.

1. "Control of Caustic-Silicate Ratio in Peroxide Bleaching Liquors"
Dr. George M. Gantz
Lonsdale Company
Lonsdale, Rhode Island

9:35 A.M.
2. "Control of J-Boxes and Steamers in Continuous Bleaching"
Charles W. Bowden
Minneapolis-Honeywell Regulator Company
Philadelphia, Pennsylvania

10:10 A.M.
3. "A New Type of Nonwoven Fabric"
John F. Ryan
Kendall Mills
Walpole, Massachusetts

INTERMISSION
(10 mins.)

10:55 A.M.
4. "Package Dyeing"
Ernest L. Caswell
Ciba Company, Inc.
New York, N. Y.

11:30 A.M.
5. "Studies with Titanium as an Agent for Imparting Durable Fire Retardancy to Fabrics"
A. E. Jacobsen (W. F. Sullivan, I. M. Panik)
National Lead Company
South Amboy, New Jersey

9:00 A. M.-12:00 Noon
WOOL GROUP MEETING—Theatre
Eric O. Appletofft, *Presiding*
Wanskuck Mills
Providence, Rhode Island

9:00 A.M.
1. "Mothproofing-Detergent Combinations"
H. C. Borghetty (Opal Sherburne, Winifred Pardey)
General Dyestuff Corp.
New York, N. Y.

9:40 A.M.
2. "Stripping of Wool Dyes with Protection Against Chemical Damage"
E. A. Leonard (L. Beck)
The Alexander Smith & Sons Carpet Co.
Yonkers, N. Y.

INTERMISSION
(5 mins.) (10:20 A.M.)

10:25 A.M.
3. "Dyeing of Wool with Vat Colors with Particular Emphasis on the Anthraquinone Types"
Dr. Arthur E. Webber
National Aniline Division
Allied Chemical & Dye Corp.
New York, N. Y.

11:05 A.M.
4. "The Worsted Mill Laboratory"
Carl E. Medde (Palmer E. Morally)
Lorraine Mfg. Co.
Pawtucket, Rhode Island, and
Wanskuck Company
Providence, Rhode Island

Saturday, September 30

9:00 A.M.-12:00 Noon
SYNTHETICS GROUP MEETING—Ballroom
Frank A. Stubbings, Presiding
Burlington Mills
Dublin, Va.

9:00 A.M.
1. "The Finishers' Position in Regard to New Synthetic Fabrics"
Francis S. Richardson
Waldrich Company
Delawanna, New Jersey

9:35 A.M.
2. "Printing of Synthetics—Trends and Mill Problems"
Arthur F. McLean
Glenlyon Print Works
Phillipsdale, Rhode Island

10:10 A.M.
3. "Nylon Dyeing—Theory and Practice"
Dr. G. T. Douglas
Imperial Chemical Industries, Ltd.
England

INTERMISSION
(5 mins.) (10:50 A.M.)

10:55 A.M.
4. "Studies in Textile Printing: III. Applications"
Ralph D. Greene (F. Fordemwalt, A. F. Klein)
Calco Chemical Division
American Cyanamid Co.
Bound Brook, New Jersey.

11:35 A.M.
5. "Odor Prevention in Resin Treated Fabrics"
Linton A. Fluck
American Cyanamid Co.
Textile Resin Dept.
Bound Brook, New Jersey

9:00 A.M.-12:00 Noon
AUXILIARIES & TESTING GROUP MEETING—Theatre
Earl D. McLeod, *Presiding*
Arnold Hoffman Co.
Providence, Rhode Island

9:00 A.M.
1. "The Printing of Soil Cloth"
Dr. Carl Z. Draves
General Dyestuff Corp.
New York, N. Y.

9:20 A.M.
2. "The Measurement of Static Electricity on Fabrics"
Mason Hayek and F. C. Cromey
E. I. duPont deNemours & Co., Inc.
Wilmington, Delaware

10:00 A.M.
3. "The Relation Between Fiber Properties and Apparent Abrasion Resistance"
D. D. Gagliardi
Rohm & Haas Co.
Philadelphia, Pa.

INTERMISSION
(5 mins.) (10:35 A.M.)

10:40 A.M.
4. "Improved Fatty Intermediates for Textile Finishing"
Dr. Leonard J. Armstrong
Armour & Company
Chicago, Illinois

11:20 A.M.
5. "The Interrelationship of Functional Fabric Properties Resulting from the Use of Special Textile Finishes"
Dr. J. Fred Oesterling
Philadelphia Quartermaster Depot
Philadelphia, Pa.

LADIES PROGRAM

Registration for the ladies will be made at the main registration desk in the lobby of the Wentworth-By-The-Sea.

The program is as follows:

Thursday, September 28

9:00-12:00 Noon
REGISTRATION—Wentworth-By-The-Sea
(Information desk in Lobby)

3:00 P.M.
TEA AND COCKTAILS — Flamingo Room—Wentworth-By-The-Sea
(Complimentary)

7:00 P.M.
LADIES DINNER—Informal (Rockingham Hotel)
(Tickets available at Information Desk)
or
OLNEY AWARD BANQUET—Wentworth-By-The-Sea

Friday, September 29

9:00 A.M.
BUS TRIP TO HISTORICAL HOMES and/or
TRIP TO GOODALL - SANFORD SALES ROOMS

Noontime — CLAMBAKE—Wentworth-By-The-Sea

3:00 P.M. — ENTERTAINMENT FOR LADIES—The Ship

8:30 P.M. — SPECIAL ENTERTAINMENT FOR ALL—Wentworth-By-The-Sea

Saturday, September 30

9:00 A.M. — TRIP TO HISTORICAL HOMES

12:00 Noon—CLAMBAKE—Wentworth-By-The-Sea

Afternoon — BOATING, BATHING, GOLFING, TENNIS, TRIP TO NAVY YARD

7:00 P.M.—BANQUET — Wentworth-By-The Sea (Formal)

CONVENTION COMMITTEES

National Chairman

KENNETH H. BARNARD
Textile Resin Department
American Cyanamid Company

General Chairman

GEORGE H. WOOD
Apponaug Company

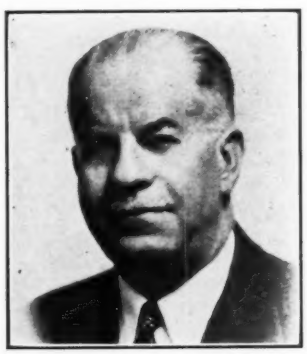
Assistant General Chairman

RAYMOND W. JACOBY
Ciba Company, Inc.

Entertainment

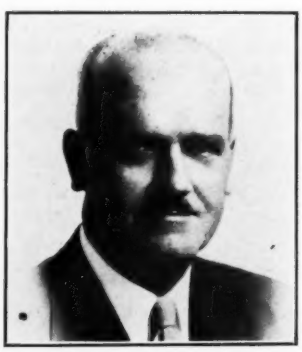
E. KENNETH BUSH, *Chairman*
American Aniline Products, Inc.
JAMES R. REDMOND, *Co-Chairman*
Textile Colors Division
Interchemical Corp.
C. A. Gaudette
Warwick Dyeing and Finishing Co., Inc.
William A. Green
Glasgo Finishing Co.
George Montgomery
Arkansas Co., Inc.
Charles S. Tanner
Chas. S. Tanner Co.
J. W. Timperley
Kenyon Piece Dye Works
Fred Tripp
Mt. Hope Finishing Co.
Walter B. Worsman
American Aniline Products, Inc.

KENNETH H. BARNARD
Chairman, National Conventions Committee



RAYMOND W. JACOBY
Assistant General Convention Chairman

ALDEN D. NUTE
Chairman, Convention Technical Program Committee



W. GEORGE PARKS
Chairman, National Technical Programs Committee
Chairman, Convention Publicity Committee

RAYMOND A. PINGREE
Chairman, Convention Exhibits Committee

E. KENNETH BUSH
Chairman, Convention Entertainment Committee

Exhibits

RAYMOND A. PINGREE, *Chairman*
Warwick Chemical Company
Division Sun Chemical Co.

GEORGE GANTZ, *Co-Chairman*
Lincoln Bleachery & Dye Works, Div. Lonsdale Co.

G. Adolph Thorell
Fruit of the Loom, Inc.

Arthur F. McLean
Glenlyon Print Works

James Shore
Atlantic Chemical Co., Inc.

Finance

ROBERT R. FARWELL, *Chairman*
E. I. du Pont de Nemours & Co., Inc.

David C. Hardman
Providence Dyeing, Bleaching & Calendering Co.

ROBERT R. FARWELL
Chairman, Convention Finance Committee

Registrations

THORWALD LARSON, *Chairman*
Carbic Color & Chemical Co., Inc.

IRA S. HURD, *Vice-Chairman*
Warwick Chemical Co. Division
Sun Chemical Co.

William T. Clarke
Arnold, Hoffman & Co., Inc.

Walter D. Cullen
Carbic Color & Chemical Co., Inc.

John H. Coogan, Jr.

Jesse A. Fraser
Stein, Hall & Co., Inc.

Fred C. Grant
Synthron, Inc.

William A. Green
Glasgo Finishing Co.

John A. Harley
Ciba Company, Inc.

George Houth
Stein, Hall & Co., Inc.

Wheaton H. Hutchison
E. I. du Pont de Nemours & Co., Inc.

Edward Maslanka
National Starch Products, Inc.

Roland C. Morrison
Calco Chemical Division
American Cyanamid Company

Charles F. Stokes
Carbic Color & Chemical Co., Inc.

Raymond B. Taylorson
General Dyestuff Corp.

Leon Therrien
Nova Chemical Corp.

Reception

THORWALD LARSON, *Chairman*
Carbic Color & Chemical Co., Inc.

IRA S. HURD, *Vice-Chairman*
Warwick Chemical Company
Division Sun Chemical Co.

Ernest H. Hart
New York Section

William O. Neeb
Philadelphia Section

W. T. Evans
South Central Section

Joseph H. Jones
Mid-West Section

William A. Nelson
Hudson-Mohawk Section

Charles K. Bishop
Pacific Northwest Section

W. Chester Cobb
Piedmont Section

W. B. Amos
Southeastern Section

F. L. Wilhelm
Pacific Southwest Section

Arthur S. Nyquist
Western New England Section

Edward S. Chapin
Northern New England Section

Elliot Broadbent
Rhode Island Section

THORWALD LARSON
Chairman, Registration and Reception Committee

Banquet and Dining

WILFRED A. LORD, *Chairman*
General Dyestuff Corp.

FRANCIS H. CASEY, *Co-Chairman*
Sandoz Chemical Works, Inc.

Ernest J. Chornyei
Bradford Dyeing Association

Neil O. MacDonald
Charles S. Bush Co.

George A. Slade
Borden & Remington Co.

Printing

FRANK L. McCOOL, *Chairman*
Sandoz Chemical Works, Inc.

Robert W. Joerger
Franklin Process Co.

William Thornton
Wanskuck Co.

FRANK L. McCOOL
Chairman, Convention Printing Committee

HERMAN C. ALLEN
Chairman, Convention Transportation Committee

ROBERT P. WOOD
Chairman, Convention Ladies Committee

WILFRED A. LORD
Co-Chairman, Convention Dining and Banquet Committee

Transportation

HERMAN C. ALLEN, *Chairman*
Sayles Finishing Plants
KENNETH J. BRODEN, *Vice-Chairman*
The Sherwin-Williams Co.
Raymond K. Andrew
U. S. Oil Co.
Hugh J. Bonino
Atlantic Chemical Co., Inc.
Harrison M. Gorton, Jr.
American Aniline Products, Inc.
Herbert F. Kilguss
Apponaug Co.
Andrew J. McNulty
Sayles Finishing Plants
Irving G. Loxley
Heyden Chemical Corp.

Ladies

ROBERT P. WOOD, *Chairman*
Calco Chemical Division
American Cyanamid Company
ARTHUR BAILEY, *Co-Chairman*
E. I. du Pont de Nemours & Co., Inc.
Mrs. Arthur Bailey
Mrs. Elliot Broadbent
Mrs. Raymond Curtis
Mrs. Edwin Farnworth
Mrs. Robert Farwell
Mrs. Raymond W. Jacoby
Mrs. Arthur Johnson
Mrs. W. George Parks
Mrs. George H. Wood
Mrs. Robert P. Wood

Publicity

W. GEORGE PARKS, *Chairman*
Rhode Island State College
Joseph E. Buonanno
Atlantic Chemical Co., Inc.
David Curtis
Kenyon Piece Dye Works

Reservations

HERBERT S. TRAVIS, *Chairman*
Rohm & Haas Co., Inc.
Edward J. Allard
National Aniline Division
Allied Chemical & Dye Corp.
Robert G. Thomas
Rohm & Haas Co., Inc.

Technical Program

W. GEORGE PARKS, *National Chairman*
Rhode Island State College
ALDEN D. NUTE, *Local Chairman*
Textile Resin Department
American Cyanamid Company
Eric O. Appeltofft
Wanskuck Co.
Kenneth C. Everett
Powdrell & Alexander, Inc.
Peter G. Kolupaev
Slatersville Finishing Co.
Earle D. McLeod
Arnold, Hoffman & Co., Inc.
Thomas H. Roberts
Arnold, Hoffman & Co., Inc.
William Stafford
Bradford Dyeing Association
Leonard A. Stanley
Slatersville Finishing Co.
Frank Stubbings
U. S. Finishing Co.
Francis Tripp
New Bedford Textile Institute

FRANCIS H. CASEY
Co-Chairman, Convention Dining and Banquet Committee

HERBERT S. TRAVIS
Chairman, Convention Reservations Committee

OLNEY MEDAL

To be Awarded to George L. Royer

GEORGE L. ROYER

THE Olney Medal will be presented to Dr. George L. Royer of Calco Chemical Division of American Cyanamid Company at the 29th National Convention during the Corporate Membership and Olney Medal Banquet on Thursday evening, September 28th. Dr. Royer will be the seventh person to receive the award, previous winners being: Dr. Louis A. Olney (1944), Dr. Milton Harris (1945), William H. Cady (1946), Edward R. Schwarz (1947), Harold M. Chase (1948) and Charles A. Seibert (1949).

George L. Royer was born in Akron, Ohio, in 1908. He obtained his secondary education in the Akron public schools and a B.S. degree in 1929 from Akron University, where he majored in chemistry. His Ph.D. degree was received at Cornell University in 1932 with a major in optical chemistry which included the use of microscopy and spectrography in the study of chemical problems.

In 1932 he was employed by the American Cyanamid Company, Calco Chemical Division, Bound Brook, New Jersey, as a microscopist in the Research Laboratory and shortly was made a part of a newly-organized Physics Laboratory. In 1935 he was transferred to the Analytical Department to establish a micro-chemical laboratory. Five papers were published in this field with his various coworkers on special apparatus designed for automatic combustion of organic compounds by the methods of Pregl. During this period he was elected secretary-treasurer of the newly formed Division of Microchemistry of the American Chemical Society, which has now become the Division of Analytical Chemistry. After several years in this office he was elected chairman of the section. In 1940 Dr. Royer was transferred to the Physical Chemical Research Section at Calco and soon became an assistant director. He is now in charge of this section with the title of Assistant Director of Application Research. His activities have centered around the use of microscopy, spectrophotometry, and various physical-chemical techniques relative to the application of dyes to textiles. Approximately thirty papers and a number of patents have been published with various co-workers in these related fields. Because of the work he did in color photomicrography, he was made one of the first Fellows of the B.P.A. and is at present on its Board of Directors. In 1947 he was invited to England by the Society of Dyers and Colourists and presented three papers before six sections of this society and also before a meeting of textile chemists in Switzerland on the work which was being done at Calco.

Dr. Royer has been active in the activities of the American Institute of Chemists, having taken part in a number of their committee reports published in the "Chemist." He was Chairman of the North Jersey Section of the American Institute of Chemists and later the New Jersey representative on its National Council.

As a member of the American Chemical Society since 1927, he has been active in attendance of local and national meetings. Three years ago he was appointed Chairman of the New Activities Committee of the North Jersey Section and was responsible for its report on proposed changes in the North Jersey Section Organization. In 1949 he was elected Chairman-Elect of the North Jersey Section and took office as Chairman on July 1, 1950.

He is a member of the American Association of Textile Chemists and Colorists, American Association of Textile Technol-

Front and Back Views of the Olney Medal

ogists, Society of Dyers and Colourists, Photographic Society of America, Metropolitan Microchemical Society, a Fellow of the Biological Photographers Association, a Fellow of the New York Microscopical Society, a Fellow of the American Institute of Chemists and American Chemical Society.

His hobbies are stamp collecting, in which he became interested because of his children; photography, which is an outgrowth of his interest in scientific photography; and television, which came as a result of an amateur interest in building his own set. He married Elizabeth Hershey in 1932, whom he had met at Cornell, and they have three children, George, Jr., age 16; Joan, age 12, and Elizabeth Anne, age 2.

* * *

The Olney Medal was endowed by the Howes Publishing Company, Inc., and is awarded by the Association at intervals of not less than a year for outstanding achievement in the field of textile chemistry, including the development of chemical agents or chemical processes used in the manufacture of textiles, or methods for their evaluation. Its purposes are to encourage and to afford public recognition of such achievements and contributions, and to be a testimonial to Dr. Louis A. Olney, founder of the AATCC, for his lifetime of devotion and multitudinous contributions to this field.

The election of a candidate to receive the award is by unanimous agreement of the Olney Medal Committee of five, constituted as follows (1) the President of the Association, (2) a member of the faculty of an educational institution awarding degrees in chemistry, (3) an employee of a concern manufacturing chemical products used in textile wet processing, (4) an employee of a concern manufacturing textiles, and (5) a member at large who may be any qualified individual. All must be senior members of the Association. The present members of the Committee and their terms of office, from January, 1950, are (1) President C. Norris Rabold, *ex-officio,* (2) Kenneth R. Fox, 1 year, (3) Wyss L. Barker, 2 years, (4) Harold W. Leitch, 3 years, and (5) William D. Appel, 4 years. The Secretary of the Association is secretary of the committee without vote. As the term of each elected member expires, the committee itself elects a successor to serve for 4 years.

* * *

There follows an abstract of the paper to be presented by the Medalist:

The Scientific Approach to the Study of the Coloring and Finishing of Textiles

The processes for the coloring and finishing of textiles have been developed over many years. When one looks at ancient fabrics made by hand centuries ago and at modern machine-made fabrics of today, one cannot help but marvel at the human efforts that have gone into their development. Individual effort and "know-how" are the remarkable aspects of ancient fabrics. Modern fabrics are even more remarkable from the viewpoint of the efforts of the many different individuals who have contributed toward the rapid machine production of fabrics which have outstanding properties of usefulness and beauty. During the time of the development of the textile industry, science has progressed and its developments have contributed to the various phases which are necessary to produce the modern textile. Chemistry and physics, as well as the applied science—engineering, have entered into the development of the machines and the processes of the textile industry, as well as into the manufacture of the necessary raw materials. The development of synthetic fibers and the modifications of the natural fibers have been the result of scientific methods and thinking. Research in organic and physical chemistry has produced our modern synthetic dyes and textile finishes and the application of the principles of physics through the practical fields of engineering has given the textile machinery its electrical and mechanical developments.

Scientific research is not new to the textile field, as scientific thinking and methods have been used since man started to work with machines. The desire to do any operation faster, cheaper, easier, or better than it has been done before requires research. To accomplish these objectives it is not necessary to have large laboratories or men with titles working under the name of research, because for years these have been the aims of the textile industry. Modern industry has become so complex and science has become so extensive in scope that it is no longer humanly possible for one man or group of men to cover all phases and, therefore, specialists have taken their places in sales, production, engineering, development, and industrial research fields.

The outstanding scientific approaches which have been used in studying the application of colorants and finishes to textiles in the last twenty years will be covered briefly in the paper. During this period of time modern concepts of chemistry have been applied to the problems of the textile field with the effect that a better understanding of some of the phenomena has resulted and this information now should be used to aid in the production of better products at a lower cost. It is true that much of this scientific study is learning what the dyer and finisher already know from a practical point of view, but the scientist should now be ready with this background to go forward at a more rapid pace in advancing the textile industry. Synthetic fibers and advances in chemicals, dyes, and resins in the last twenty years have contributed to more satisfactory textiles, but they also have complicated the problems of the textile chemist. A cooperative spirit and understanding between the practical man and the scientist should be helpful in advancing the textile field.

Your Convention Host—

THE RHODE ISLAND SECTION

W. H. CADY
U. S. Finishing Company

THE Constitution of the AATCC as adopted at the Inaugural Meeting on November 3, 1921, made provision for the organization of local sections. It read in part as follows: "Twenty-five or more members residing in any district may notify the Council of their desire to form a local section."

PETITION PRESENTED

Immediately after the Inaugural Meeting all the members residing in or near Rhode Island were canvassed, and twenty-six signed a petition requesting the Council to authorize the formation of a Rhode Island Section, to be located in Providence. This petition was presented at the first meeting of the Council, held on November 18. The necessary authority was immediately granted, and the writer was appointed Secretary *pro tem.* to organize the Section. The boundaries were to be the same as those of the state of Rhode Island, but permission was granted to members living outside the state to affiliate with the Section, if they so desired. Later the boundaries were extended to include Bristol County in Massachusetts and all of Connecticut east of the Connecticut River. Rhode Island thus became the first of a series of local sections which now cover almost the entire country.

ORGANIZATION MEETING

A meeting to organize the Section was held at the To Kalon Club in Pawtucket on December 30, 1921. Twenty-six members and two guests were present. After an informal dinner the Secretary *pro tem.* called the meeting to order and announced the action of the Council in approving the petition. It was unanimously voted to organize the Section at once, and the writer was elected temporary chairman and H. N. F. Schaeffer temporary secretary. The chairman was authorized to appoint a committee to prepare nominations for permanent officers of the Section, and to present them at the next meeting. It was voted to hold meetings every six weeks except in the summer time. A poll of the members indicated a preference for Friday evening for meetings. Roscoe L. Chase, former manager of the Arnold Print Works, then gave an informal talk on "Mercerization." The chairman followed wtih a brief account of the work of the Council and outlined the plans of the Research Committee for attacking the problem of standard fastness tests.

ELECTION OF OFFICERS

The second meeting of the Section was held on February 17, 1922, in the rooms of the Providence Engineering Society, with thirty members present. The nominating committee, R. F. Culver, Chairman, reported the following nominations for officers of the Section:

For *Chairman,* W. H. Cady
For *Treasurer,* Ben Verity
For *Secretary,* F. C. Cushing
For *Sectional Committee,* R. L. Chase, J. G. Masson, H. F. Schwarz, and W. S. Williams.

By a unanimous vote these men were elected. Robert S. Weston, consulting engineer, then gave an illustrated talk on "Water Purification for Textile Purposes."

MEETINGS

From this small beginning the Section has grown continuously until it now contains over 550 members. Meetings are held monthly from October to April, usually in the hall of the Providence Engineering Society, which is centrally located, accommodates over 200 persons, and has all necessary facilities. Each meeting is preceded by an informal dinner at a hotel, attended principally by the local officers and committees. The average attendance at meetings is about 150 at the present time.

The custom of holding an annual outing was inaugurated August 29, 1932, at the Warwick Country Club, and has been continued ever since, except during the war period. These affairs have been extremely popular.

ANNUAL MEETINGS

The Section has already been host to the Association at its Annual Meeting on three occasions, December 8, 1923, December 8, 1928, and December 5, 1936. It is unfortunate that with the rapid growth of the Association it is no longer possible to hold the Annual Meeting within the boundaries of the Section, since there are no adequate hotel accommodations. To get around this difficulty this year, Portsmouth, New Hampshire, has been temporarily annexed to the Rhode Island Section, but only for Convention purposes, and with the knowledge and approval of the Northern New England Section.

CONTEST PRIZES

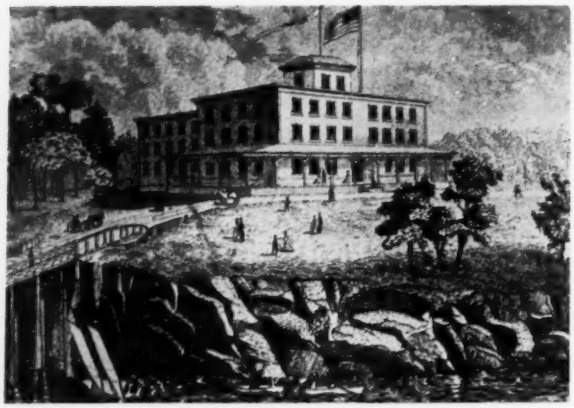
At the first Intersectional Contest held in 1940, the Section won first prize with its paper on "The Effect of Modern Finishing Agents on the Light Fastness of Cotton Colors." The Section also captured first prize in 1944 and 1945 with its papers on "Factors Affecting Color Yield in Vat Color Printing" and "Factors Which Cause or Prevent Agglomeration of Pigment Particles"; third prize in 1946 with its paper on "The Replacement of Starch in the Treatment of Textile Fibers and Fabrics"; and first prize in 1949 with its paper on "Acid Colloids of Resins".

CHARTER MEMBERS

The Charter Members affiliated with the Section at the time of its organization were as follows:

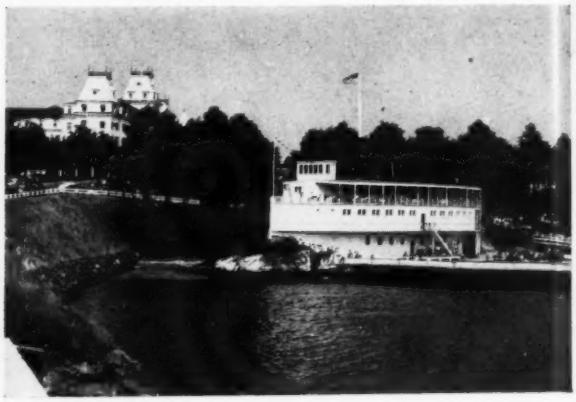
C. Nelson Alderman	John W. Clark
Peter J. Ariente	Joseph H. Creaser
Nelson Barlow	Ralph F. Culver
William H. Cady	Frederick C. Cushing
Roscoe L. Chase	Harold J. Daigneault
Charles H. Church	John N. Dalton

(Concluded on Page P587)



Lou Koch Service

View of Wentworth-by-the-Sea in the Gay Nineties. Close observation shows horse and buggy, horseback riders and a croquet match and very long hoop skirts.



Lou Koch Service

A similar view of Wentworth-by-the-Sea about 50 years later, as it is today

Convention Headquarters

WENTWORTH - BY - THE - SEA

LOU KOCH

WENTWORTH-BY-THE-SEA, situated on the shores of the Atlantic as its name implies, bears a background of historical repute, varied ownership and great attraction.

The Hotel Wentworth originally contained 82 rooms and was built in 1874 at a cost of $52,000, by Charles E. Campbell of New Castle, N. H., and Daniel E. Chase, a Somerville, Mass., rum distiller. The following year 20 rooms were added and the rate per day, for room and meals, was $1.50, as average. Today, the rate is $15.00 per day, average, and there are 265 rooms.

Campbell and Chase held on to their property for three years, followed by a three year period of bankruptcy. In the year 1881, a man named Frank Jones purchased it. Later in life, he was also proprietor of the Rockingham Hotel.

When he bought the Wentworth, in its state of bankruptcy, Jones added a third story, built the towers which still stand today, kept adding sections and wings with more rooms, and an enormous dining room. He made the Wentworth a nulcleus and gathering place of society of the day, and the property was dotted with many of the best horses and carriages of the era. Jones was reputed to have held an interest in a stage coach which ran from Portsmouth to New Castle and the Wentworth. He was also a director of the old Eastern Railroad which ran from Boston to Portland, and built the old Dover-Portsmouth branch of the railroad.

Harry Priest, North Carolina hotel manager, joined with Al Shaw, a wealthy Bath, Maine lumberman, to purchase the Wentworth from the Frank Jones estate. Harry H. Beckwith bought the resort in 1920, made many improvements, including the building of "The Ship," and held it until 1945.

The vast resort property is now owned by James Barker Smith, young veteran hotelman of Kansas, Colorado, Texas, Mississippi and Florida repute; he is now a bona fide resident of the Granite State. He is also the owner of the Rockingham Hotel.

In 1905 the hotel housed the consort of the Russo-Japanese Peace Conferences, which were held in nearby Portsmouth Navy Yard. Theodore Roosevelt, in the role of peacemaker, chose Portsmouth as the site of the peace conference. Acting as president of a neutral nation, he sent identical notes of peace overture to the Russians and Japanese, inviting the Czar and Emperor, respectively and respectfully, to send emissaries to America for the express purpose of sitting down to neutral conference tables to iron things out.

Japan accepted first, and a week later, Russia took up the invitation. Their war had started on February 11, 1904 and on August 9, 1905, the peace conferences had opened in New Hampshire. On September 5, the treaties were consummated, marking the ending of hostilities between the two empires.

A great deal of the business of the treaty was accomplished in the rooms of the Wentworth, across its dining tables, and yes, in its bar. About 200 newspaper correspondents were on hand for the conferences.

Protocols prepared, the actual wording of the treaty was entrusted to two savants of international law, Professor Theodore Martens of St. Petersburg, the Russian capital of the day, and Henry W. Dennison, acting for Japan. The wording of the treaty was accomplished in Professor Martens' room at Wentworth-by-the-Sea.

In 1948 the Wentworth-by-the-Sea was the scene of the annual U. S. Governor's Conference. Governors Dewey and Warren posed on the front steps for photographers who found out a fortnight later that they had picked the Republican presidential ticket before the Philadelphia convention had done so.

INTERSECTIONAL CONTEST, PORTSMOUTH, N. H.

Committees • Judges • Abstracts

FRANK J. O'NEIL
Chairman, National Intersectional Contest Committee

National Committee

FRANK J. O'NEIL, *Chairman*
Pacific Mills

Ralph E. Hale
The Bell Co.

J. Robert Bonnar
General Dyestuff Corp.

Patrick J. Kennedy
E. I. du Pont de Nemours & Co., Inc.

Thomas R. Smith
Wiscassett Mills Co.

Earle D. McLeod, *Secretary*
Arnold, Hoffman & Co., Inc.

Arthur W. Etchells
Hellwig Dyeing Corp.

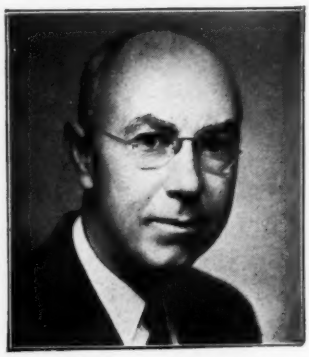
EARLE D. McLEOD
Secretary, National Intersectional Contest Committee

THOMAS R. SMITH
Member, National Intersectional Contest Committee

RALPH E. HALE
Member, National Intersectional Contest Committee

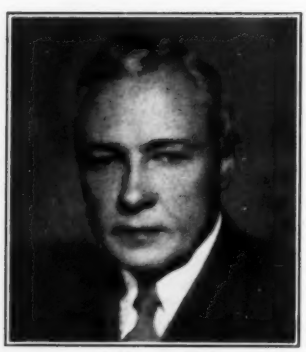
PATRICK J. KENNEDY
Member, National Intersectional Contest Committee

C. WENDALL LEVER
Judge Representing Northern New England



WILLIAM D. APPEL
Chief Justice, Intersectional Contest

ROBERT JOERGER
Judge Representing Rhode Island



HERMAN E. HAGER
Judge Representing New York

Judges

Chief Justice

WILLIAM D. APPEL
National Bureau of Standards

Judges Representing Sections

Northern New England
C. Wendall Lever
Goodall-Sanford, Inc.

Rhode Island
Robert W. Joerger
Franklin Process Co.

New York
Herman E. Hager
General Dyestuff Corp.

Philadelphia
Jackson A. Woodruff
American Viscose Corp.

Piedmont
Harley Y. Jennings
Dan River Mills, Inc.

South Central
William F. Luther
Dixie Mercerizing Co.

Southeastern
Dr. Walter M. Scott
U. S. Department of Agriculture

Mid-West
Elliott Morrill
Best Foods, Inc.

HARLEY Y. JENNINGS
Judge Representing Piedmont

JACKSON A. WOODRUFF
Judge Representing Philadelphia

WILLIAM F. LUTHER
Judge Representing South Central

ELLIOTT MORRILL
Judge Representing Mid-West Section

Northern New England Section

WILLIAM W. PENNOCK, *Chairman*
E. I. du Pont de Nemours & Co., Inc.

John H. Skinkle
Lowell Textile Institute

Robert G. Fiddes
Waumbec Mills

Leslie Christison
American Woolen Co.

Edward M. Lynch, Jr.
The Derby Co.

Paper: "Comparison of Referee Soxhlet and Rapid Method of Oil and Grease Determination"

Abstract: The standard Soxhlet method requires elaborate apparatus and is time-consuming. Various short-cut methods which are generally considered less accurate than the Soxhlet method have been proposed from time to time. This paper describes a quick simple method to determine oil in textile materials, using only apparatus normally present in any laboratory and, by comparison with the Soxhlet method and samples of known oil content, is at least as accurate as the Soxhlet. The time required is about 30 minutes for a single determination as compared with about 3 hours using the Soxhlet.

The method is not in itself a new one, being a simplified modification of known methods, but the fact that its accuracy is at least as good as the Soxhlet method is considered new and novel. This inherent accuracy is demonstrated statistically on an adequate number of samples by several mill laboratories.

Rhode Island Section

EDWARD W. LAWRENCE, *Chairman*
Cranston Print Works Company

Dr. W. George Parks
Rhode Island State College

Edward J. Allard
National Aniline Division
Allied Chemical & Dye Corp.

Edward H. Gamble
E. I. du Pont de Nemours & Co., Inc.

Raymond B. Taylorson
General Dyestuff Corp.

William H. Cady
U. S. Finishing Co.

John Roarke
Lincoln Bleachery & Dye Works

Arthur M. McLean
Glenlyon Print Works

J. W. Timperley
Kenyon Piece Dyeworks, Inc.

Robert P. Wood
Calco Chemical Division
American Cyanamid Company

Peter J. Ariente
Sayles Finishing Plants

Raymond W. Jacoby
Ciba Company, Inc.

George H. Wood
Apponaug Company

WALTER M. SCOTT
Judge Representing Southeastern

William J. Jutras

R. F. Caroselli
Owens-Corning Fiberglas Corp.

Arthur C. Merrill
Arnold, Hoffman & Co.

Ernest J. Chornyei
Bradford Dyeing Association

James A. Davies
Arnold, Hoffman & Co.

Paper: "The Continuous Dyeing of Nylon Fabrics"

Abstract: Preliminary tests indicate that it is possible to dye nylon fabrics by the use of acid colors, by padding the dissolved dyestuff and steaming in conventional vat dyeing equipment. The chemistry and the physical nature of the phenomena are discussed.

Spectrophotometric data are tabulated, showing the color value, wash fastness, influence of variation in length of steaming, influence of acids or assistants, and influence of heat treatments. Common dyeing problems of migration, preferential sorption, warpiness and barre effects are discussed from data obtained during plant dyeings.

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WILLIAM W. PENNOCK
Chairman, Northern New England Contest Committee

EDWARD W. LAWRENCE
Chairman, Rhode Island Contest Committee

ARTHUR R. WACHTER
Chairman, New York Contest Committee

New York Section

ARTHUR R. WACHTER, *Chairman and Speaker*
American Viscose Corp.

Ralph R. Riegner
American Viscose Corp.

Charles W. Dorn
J. C. Penney Co.

Dr. William E. Coughlin
Good Housekeeping Institute

William H. Masterson
Better Fabrics Testing Bureau

Dr. Frank A. Tesi
W. T. Grant Co.

Dr. Eugene W. K. Schwarz
Consultant

Ralph B. Smith
N. J. Laundry and Cleaning Institute

Paper: "The 'Strip Tester'—An Instrument Designed to Measure Dimensional Change in Woven Fabrics"

Abstract: This new instrument was developed in an effort to eliminate or minimize certain undesirable characteristics pertaining to both the equipment and the procedures employed in recognized testing methods for determining rayon fabric shrinkage. The procedures outlined, for example, in AATCC Standard Test 14-33, CCC-T-191a, CS 59-44 or the Tension Presser method all require the use of costly and expensive machinery; the methods are complex and time-consuming and must be performed by a laboratory technician. Furthermore, inter-laboratory tests show wide discrepancies, and even tests performed in the same laboratory by the same operator often produce results that fluctuate beyond a reasonable amount. With such established facts upon which to base conclusions no known test procedure can give accurate information on the consumer performance of a rayon fabric in laundering.

The "Strip-Tester" overcomes, to a considerable degree, most of these deficiencies; it is a small, relatively inexpensive apparatus; each test on a strip of fabric can be completed in less than ten minutes; test results from different laboratories at different times are highly reproducible and can be performed by persons who are not trained technicians.

The apparatus is of simple construction, consisting of a Pyrex cylinder in which the test strip is held upright between two clamps, the lower clamp being stationary, and the upper one connected with a balanced arm to which varying amounts of tension from zero upward may be applied. The arm itself is balanced on a ball-bearing and has affixed to it a pointer-indicator that operates over a scale that is calibrated in fractions of percentage (shrinkage or elongation). The lower opening of the cylinder can be sealed by a hinged metal closure to permit filling with water and opened to admit hot air from a blower which swivels on the main support of the entire apparatus.

The test method involves only three simple operations:

1. Drying the fabric in a relaxed condition in the cylinder.

2. Wetting the strip with boiling water under the desired tension.

3. Drying the fabric and reading the percentage of dimensional change registered on the calibrated scale.

It should be noted that from the time the machine is set until the final reading is recorded the human element involved in pressing, measuring and converting into percentage has been entirely eliminated. Also, the progressive changes that occur in the fabric can be followed by observing the movement of the indicator throughout the wetting and drying operations.

The object of this paper will be to present a comparison of results of tests made on eight different fabrics by the "Strip-Tester" method, various currently used test procedures and both home and commercial laundering.

Philadelphia Section

H. F. CLAPHAM, *Chairman*
E. I. du Pont de Nemours & Co., Inc.

C. T. Anderson
Ciba Company, Inc.

E. C. Dreby
Scholler Brothers, Inc.

A. W. Etchells
Hellwig Dyeing Corp.

A. F. Felgendreger
Continental Mills, Inc.

T. R. Foltz
Philadelphia Textile Institute

J. W. Killheffer
E. I. du Pont de Nemours & Co., Inc.

C. J. Monego
Philadelphia Textile Institute

F. J. Rizzo
Quartermaster Research & Development Labs.

P. Theel
Philadelphia Textile Institute

F. V. Traut
Globe Dye Works Co.

T. J. Scanlon
American Cyanamid Company

L. Wiener

Paper: "The Relating of Laboratory Exhaust Data to Mill Practice"

Abstract: It has been general practice in the dyestuff industry to prepare charts showing the rate of exhaust for all types of colors on textile fibers. These charts are prepared using dyebath conditions that are considered to be average. Unfortunately average conditions do not generally exist in practice. The Philadelphia Section has developed a simple laboratory apparatus and method for determining exhaust rates versatile enough so that mill conditions can be duplicated. The apparatus is simple in construction and readily applicable to practically any mill laboratory. In the paper, representative results are illustrated including correlation between actual mill dyeings and laboratory duplication thereof. Practically all of the experimental work has been done on wool with acid colors. Some data are presented for acid colors on nylon.

In addition to correlating laboratory data with mill results, some interesting observations have been made on the effect of cooling the dyebath and the effect of Glauber's salt.

Piedmont Section

HENRY A. RUTHERFORD, *Chairman*
North Carolina State College

W. L. Barker
National Aniline Division
Allied Chemical & Dye Corp.

E. A. Briggs
Southern Franklin Process Co.

R. A. Bruce
Amalgamated Chemical Corp.

K. S. Campbell
North Carolina State College

J. N. Grant
American Cyanamid Company

C. Hooper
Burlington Mills

Dr. H. Y. Jennings
Dan River Mills, Inc.

H. J. Jordan, Jr.
Wiscassett Mills Co.

J. C. King
Fairforest Finishing Co.

J. Lindsay, Jr.
Clemson College

M. M. McCann

J. B. Neely
Burlington Mills Corp.

L. C. Reynolds
Riegel Textile Corp.

R. H. Smith
High Point Chemical Mfg. Co.

F. W. Sturtevant
Marshall Field and Co.

J. C. Whitt
Standard Hosiery Mills

S. H. Williams
General Dyestuff Corp.

Paper: "A Comparison of the Dyeing

Characteristics and Related Properties of Rain-grown and Irrigated Cotton"

Abstract: Certain industrial users have encountered considerable difficulty in the processing of cotton grown under irrigated conditions in the United States. For example, a particular difficulty arises from the fact that a rain-grown cotton dyes a fuller shade than a comparable quality of irrigated cotton dyed in an identical manner; this means that mills using both types of cotton frequently are confronted with a problem in obtaining even shades within a lot, or from batch to batch. Prompted in part by the increasing economic importance of irrigated cottons, a study has been made of the chemical properties and other aspects of the two cottons which may have a bearing upon their processing and dyeing differences. An attempt has been made to establish whether these differences are of the kind which are subject to chemical control, or whether they constitute inherent properties of the fibers, and are not subject to appreciable modification. The investigation was divided into five categories, namely, analytical, chemical behavior, processing procedures, dyeing characteristics, and reflectance properties. Comparative analyses of the two cottons were made with regard to: metallic constituents, pectic substance, ash and ash alkalinity, cold and hot water extractable substances, degree of polymerization and rate of attack by hydrochloric acid and by bleaching agents. These analyses indicated that the cottons were substantially alike in all respects except in the amount of substance which could be extracted by water from the raw cottons, and molecular chain length. Although it was found that the rate and degree of pigment agglomeration in the pigment method of vat dyeing was dependent to a considerable extent upon the nature and amount of the naturally occurring extractable impurities, experiments failed to show that it was related significantly to the final depth of shade obtained. Molecular chain length could hardly have been a significant factor in bringing about the shade differences observed in the relatively undegraded cotton being examined. Although these differences in shade were in many cases quite material, it was surprising to find that the amount of dye absorbed by the two cottons under identical conditions was, as determined by spectrophotometric procedure, precisely the same. The observation that no more dyestuff was taken up by one cotton than by the other was further substantiated by a series of exhaust dyeings made with various dyestuffs on the two types of cotton. Thus, differences in shade had to be attributed to one of two causes, distribution of dye within the fiber, or reflectance characteristics of the fiber-dye system. Photomicrographs of cross sections of the dyed fibers showed that the distribution of dye was substantially the same for the two cottons. However, since the apparent differences in depth of shade of the two cottons could be minimized or even made to disappear entirely with a change of viewing angle, it was evident that their reflectance characteristics must be markedly different. Mercerization, which is known to alter reflectance properties, also minimized the shade differences; such optical measurements as could be made, although difficult to interpret, tended to confirm this view. There is strong support for the belief that reflectance from dyed fiber surface is the most important single difference in rain-grown and irrigated cotton, as far as dyeing difficulties are concerned, and is chiefly responsible for their apparently different dyeing properties.

South Central Section

F. T. SIMON, *Chairman*
Peerless Woolen Mills

H. A. Webb
General Dyestuff Corp.

R. J. Tyrell
Riegel Textile Corp.

J. H. O'Neill
Riegel Textile Corp.

G. R. Bellamy
Ciba Company, Inc.

C. H. Asbury

Paper: "Spectrophotometric Studies of Continuous Dyeing"

Abstract: The object of this study is to present a simple, yet fairly precise procedure of measurement of dye mixtures and to show data obtained from actual mill runs.

The elimination of all highly technical functions from the spectrophotometric part of this work was kept in mind so that a method adaptable for "in the plant" control is demonstrated. Several types of continuous dyeing are discussed.

All Contest Papers will be published in the Proceedings

Your Convention Host —

(Concluded from Page P581)

Rene J. B. Delys	Karl R. Moore
Paul F. Estey	Herbert S. Morrow
Duncan Ferguson	James Murray
Edgar R. Ford	Charles H. Parish
John H. Grady	J. Albert Pawson
John E. Graham	Carroll W. Peck
Eugene S. Graves	Fred T. Phillips
James H. Hacking	Philip C. Putnam
Joseph H. Hindle	Herbert B. Reno
Arthur E. Hirst	Henri N. F. Schaeffer
John Hutton	Herbert F. Schwarz
Harry G. Jackson	Charles H. Stott
William T. Joyce	Harold B. Sturtevant
Charles B. Kendall	Tom Turner
John A. Kydd	Joseph Vanslette
Alfred L. Lustig	Ben Verity
Robert K. Lyons	John C. Watson
John G. Masson	Fred H. Webster
Morrell Mackenzie	Walter S. Williams
John McNeil	William H. Wingate
Herbert A. Matteson	William Witte
William Milne	Lawrence B. Wood
Charles I. Milnes	William P. Wright

CHAIRMEN

The names of the local chairmen since the Section was organized are as follows:

1922, W. H. Cady
1922-25, R. F. Culver
1925-27, W. S. Williams
1927-29, John Hutton
1929-31, R. B. Earle
1931, D. H. Powers
1931-32, L. L. Bamberger
1932-34, H. F. Lawton
1934-37, J. G. Masson
1937-39, R. Haworth
1939-41, A. R. Fletcher
1941-42, Ben Verity
1942-44, H. V. King
1944-45, H. B. Sturtevant
1945-47, G. H. Wood, Jr.
1947-49, R. W. Joerger
1949-50, E. Broadbent

STUDENT CHAPTERS

The Section now has two Student Chapters: one at the New Bedford Textile Institute, organized in 1947, and the other at the Bradford Durfee Technical Institute, Fall River, organized in 1948.

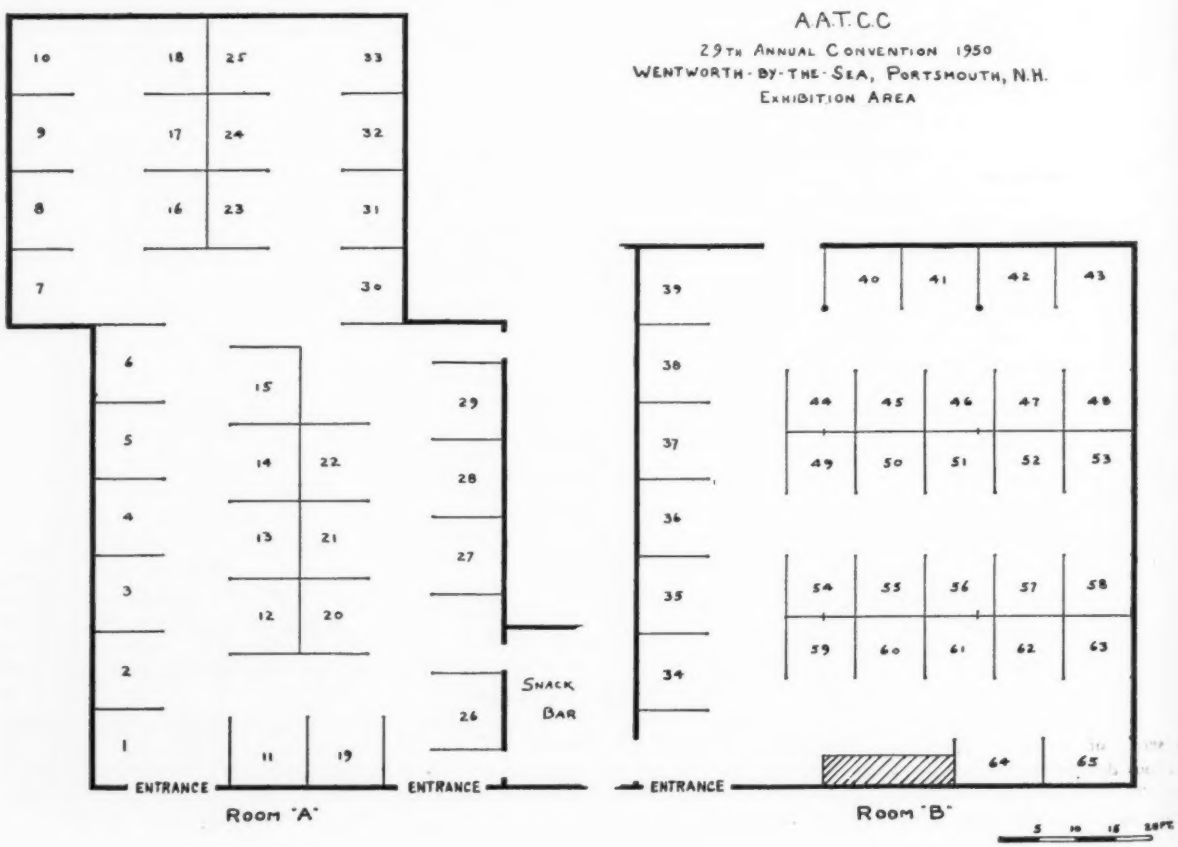
Exhibits

AT THE PORTSMOUTH CONVENTION

SIXTY-FIVE booth spaces are available to house the exhibits at the Portsmouth Convention. The varied displays will be well worth visiting and include dyestuffs, textiles, chemicals, machinery and instruments manufactured by many leading manufacturers. There are also exhibits by educational institutions in the textile field, the AATCC, and Intersectional Contest committees. The exhibition will reflect the scientific and technological progress of the textile and allied industries. The exhibits will be open as follows:

Thursday—1:00 P.M. to 9:00 P.M.
Friday—10:00 A.M. to 9:00 P. M.
Saturday—10:00 A.M. to 3.00 P.M.

There follows an alphabetical listing of the exhibitors with brief descriptions of displays and names of persons in attendance. There is also a list of exhibitors by booth number.



Amalgamated Chemical Corp.

Rorer and Ontario Streets
Philadelphia 34, Pennsylvania

Booth #54

This display will consist of finishes for textile fabrics including hosiery.

In attendance: HAROLD B. DOHNER, President; ROBERT A. BRUCE, Vice-President and Treasurer; JOHN M. JESTER, Secretary; CHARLES E. SEEL, GEORGE C. HARKINS, Technicians; HILLARY ROBINETTE, JR., Research Director.

American Association of Textile Chemists and Colorists

Lowell Textile Institute
Lowell, Massachusetts

Booths #12, #13, #14, #15, #20, #21, #22

Textile wet processing test methods and equipment will be shown. Special features include: a dynamic dimensional change meter; the Accelerotor, for use in a highly accelerated test for determining color fastness to laundering; a display by the Washfastness Committee of commercially laundered washable cotton dresses to illustrate color loss; new steel tubes for the accelerated Launder-Ometer test.

In attendance: DR. H. W. STIEGLER, Director of Research.

American Dyestuff Reporter

44 East 23rd Street
New York 10, New York

Booth #26

Official publication of the Proceedings of the American Association of Textile Chemists and Colorists.

Arnold, Hoffman & Co., Inc. (Sole Distributors for ICI)

Providence, Rhode Island

Booths #57, #58

Principle exhibits will be: the Marney Laboratory Dyeing Machine, designed to enable exact standardization of conditions for laboratory dyeings to be obtained and repeated at will; the Carbolan colors, a unique range of level dyeing wool colors said to be of high fastness; the Solacet colors, a range of specialty water-soluble dyestuffs suitable for rayon and other synthetic fibers; Alcian Blue, a printing color with unique properties; the Ahco Leather dyes, a range of high quality leather dyestuffs.

In attendance: WILLIAM T. CLARKE, New England Sales Manager; ARTHUR T. MERRILL, Sales Service Laboratory; THOMAS H. ROBERTS, W. CHESTER COBB, ERIC R. HERBERTSON, Vice-Presidents; members of the sales service staff.

Atlantic Chemical Company, Inc.

2072 Smith Street
Centredale 11, Rhode Island

Booth #55

This exhibit will display the latest textile auxiliaries and textile chemicals and will show their effects upon all types of fibers and fabrics. Kodachrome slides showing their manufacture and processing will also be presented.

In attendance: JAMES C. SHORE, Technical Director; WILLIAM J. DALY, Production Superintendent.

Atlas Electric Devices Co., Inc.

361 West Superior Street
Chicago 10, Illinois

Booth #28

On display will be the Fade-Ometer and Launder-Ometer, the standard laboratory equipment for fastness to light and washing tests. The Launder-Ometer will be exhibited with the new metal specimen containers developed to reproduce in 45 minutes the average of five commercial launderings.

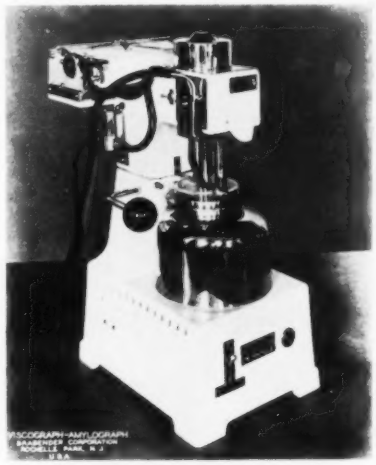
In attendance: JOHN W. LANE; J. E. NORTON.

Brabender Corporation

Rochelle Park, New Jersey

Booth #39

Exhibited will be the semi-automatic moisture tester and the Viscograph. The Viscograph is an experimental starch cooking and cooling apparatus, containing a viscosity measuring and recording mechanism and a very sensitive temperature control system which regulates the speed of heating and the speed of cooling at a constant rate of 1.5°C. It is stated that the Viscograph is capable of determining: the viscosity the cooked starch will have with given amounts of water



Brabender Viscograph

additions, the influence which certain enzymes will have on starch viscosity, the influence of resin additions on starch viscosity, the rate of starch gelatinization during cooking and how this cooking should be regulated for best viscosity results, the viscosity of size after cooling, the stability of size under slow but constant agitation. It contains a motor-driven thermoregulator which is said to be capable of heating or cooling test suspensions at controlled constant rate of temperature increase or decrease and automatically recording time, temperature and viscosity on one graph. The semi-automatic moisture tester is a combination of a modern drying oven and an analytical balance. After drying, moisture figures can be read on an illuminated dial, directly in percent. It is stated that there is no cooling, no desiccator

Brabender Moisture Tester

and no calculations. It plots rate-of-drying curves conveniently and efficiently. It is further stated that the instrument is in use by over 200 textile concerns who have found it a suitable conditioning oven. Most use it for determining regain but many also use it for determining the moisture in raw and scoured wool as well as in tops.

In attendance: ARTHUR HARTKOPF, President.

Bradford Durfee Technical Institute

Fall River, Massachusetts

Booth #2

The theme of this display involves the integration of the basic sciences with the humanities to achieve optimum participation in American technology. The exhibit will be a visual explanation of the curricula in which students participate, including the broad backgrounds in the social sciences and the application of their theories in American industry as well as the development of specific knowledge and skills in the basic sciences and their application in our technological economy.

In attendance: WILLIAM J. WINGATE, Instructor in Dyeing and Finishing.

Calco Chemical Division American Cyanamid Company

Bound Brook, New Jersey

Booths #9 and #10

This exhibit will emphasize the importance of fast dyes and around this theme have been built several features that should provide subjects of considerable interest.

In attendance: J. PFISTER; J. L. NAYLOR; RALPH GREENE; K. H. KLIPSTEIN; DR. GEORGE L. ROYER; DR. A. L. PEIKER; DR. ROY KIENLE; technical and sales representatives.

Carbide and Carbon Chemicals Division, Union Carbide and Carbon Corporation

30 East 42nd Street
New York 17, New York

Booth #51

This exhibit will show dyeing techniques for the new synthetic fiber, dynel.

In attendance: T. A. FEILD, JR.; A. L. SNYDER; ELDON STOWELL.

Ciba Company, Inc.

627 Greenwich Street
New York 14, New York

Booth #24

This exhibit will feature a colorful display in the form of a flow chart showing raw materials, equipment, intermediate products and reactions for the manufacture of a fast-to-light substantive dyestuff.

In attendance: E. P. WARD, E. D. LIND, M. G. STERN, G. BATTYE, C. M. KOPATCH, H. A. MORRISON, H. X. DeREDON, H. E. STANLEY, G. WISEMAN, E. CASWELL, A. RODENHAVEN, J. J. GEARY, A. G. TEW, J. A. HARLEY, G. WYATT, R. W. JACOBY.

Daily News Record

7 East 12th Street
New York 3, New York

Booth #19

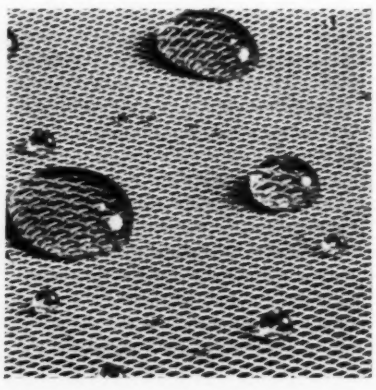
Textile publication.

Dow Corning Corporation

Midland, Michigan

Booth #33

Featured will be DeCetex 104, a silicone water repellent for treating nylon, Orlon and acetate and fabrics containing mixtures of these fibers. Other products to be shown will be Dow Corning Silicone Greases for lubrication, DC Silicone Insulation for electric motors, etc.



Open-mesh nylon marquisette, when treated with DeCetex 104 silicone treatment, is said to become so water repellent that water stands up on its surface in mercury-like globules.

and DC Antifoam A, a silicone defoaming compound.

In attendance: F. L. DENNETT, Fiber Treatment Section of Product Engineering Laboratories; N. C. FOSTER, R. E. KNOPF, Technical Sales Representatives.

E. F. Drew & Co., Inc.

15 East 26th Street
New York 10, N. Y.

Booth #23

Textile chemical specialties will be on display.

In attendance: DR. G. ZINZALIAN, Sales Manager, Technical Products Division; H. H. PACT, N. E. Sales Manager, Technical Products Division; J. P. REDSTON, Canadian Manager, Oil Specialties Division; L. W. DAVIS, Technical Director, Textile Division; W. A. CUMMINGS, N. E. Salesman.

E. I. du Pont de Nemours & Co., Inc. Dyestuffs Division, Organic Chemicals Department

Wilmington 98, Delaware

Booths #49 and #50

On display will be dyed pieces of some of the newer fabrics.

In attendance: C. H. STOTT, Manager, Providence Office; representatives from several branch agencies, Wilmington, and the Technical Laboratory.

Geigy Company, Inc.

89-91 Barclay Street
New York 8, New York

Booth #25

On exhibit will be the following: fabrics and fibers illustrating an aftertreating agent for increased wash fastness; fabrics and fibers illustrating a blue recommended for excellent gas fading fastness; fabrics and fibers illustrating fluorescents for cotton, rayon, nylon and wool; fabrics and fibers illustrating a wash fastness treatment for nylon.

General Dyestuff Corporation

435 Hudson Street
New York 14, New York

Booths #31 and #32

Techniques beneficial to improved qual-

ity, economy and speed will be shown. Featured will be new processes for the application of dyestuffs. An attractive background will emphasize the importance of color in textile processing.

In attendance: J. ROBERT BONNAR; DR. HERMAN E. HAGER; PAUL J. CHOQUETTE; DR. H. LUTTRINGHAUS; JOHN H. HENNESSEY; E. HANSEN; L. S. THOMPSON; DR. CARL Z. DRAVES.

George A. Goulston Company

80 Federal Street
Boston 10, Massachusetts

Booth #47

This exhibit will feature X-Static PD, an oil said to process unusual antistatic, lubricating and self-scouring properties. Also on display will be other oils for specific applications in the woolen and worsted industries. Page Chemicals, Inc., an associated company, will display chemicals for wet processing in the woolen and worsted industry.

In attendance: GEORGE A. GOULSTON, ROBERT R. ACKLEY, A. WINOGRAD, B. GOULSTON, A. GOULSTON.

Hart-Moisture-Meters

Suite 1948, Grand Central Terminal
New York 17, New York

Booth #48

The complete line of instruments will be displayed.

In attendance: RAYMOND S. HART; WILLIAM E. BARNETT.

Institute of Textile Technology

Charlottesville, Virginia

Booth #18

Some types of work being done for members and government agencies will be illustrated. The Uniformity Analyzer will be featured. This was developed at the Institute and is now being manufactured and marketed by the Brush Development Company of Cleveland. This instrument permits the measurement and recording of the uniformity of yarn, roving and sliver. Yarns are normally tested at the rate of five feet per second and roving and sliver can be tested at this rate, but the force necessary to test it at this high speed might cause some draft, therefore it is tested at six inches a second. A calculator has been developed which permits a numeric evaluation of the nonuniformity of the yarn to replace the laborious manual calculation that has previously been required. Results of work on detergency will also be shown.

In attendance: W. F. BUSSE, Technical Director; E. M. HENSLEY, Commercial Engineer, Brush Development Company.

Instrument Development Laboratories, Inc.

163 Highland Avenue
Needham Heights 94, Massachusetts

Booth #30

The Color-Eye instrument for color measurement and control will be exhibited. Samples will be measured for visitors and a demonstration of its uses in the textile field will be given.

In attendance: GEORGE P. BENTLEY, President; ALEXANDER R. MacDONALD, Sales Representative for New England and the South; H. B. RAMEY, Sales Representative for New York and Pennsylvania Area.

Lawrence Pump and Engine Co.

Post Office Box 70
Lawrence, Massachusetts

Booth #8

Centrifugal pumps and mixers will be on display. Featured will be mixers for textile colors. The mixers are both portable and stationary and furnished for capacities from 5 to 500 gallons.

In attendance: E. P. DEAN; J. L. DEAN; GEORGE MARSTERS.

Lowell Textile Institute

Lowell, Massachusetts

Booth #3

On display will be an automatic dye rate indicator.

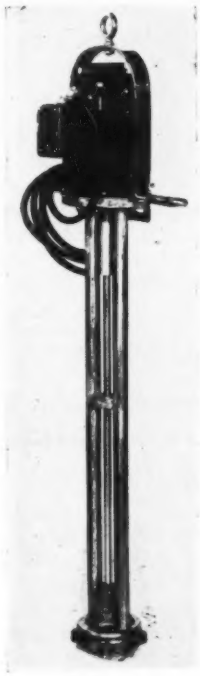
In attendance: PROF. ELMER E. FICKETT; PROF. JOHN H. SKINKLE; PROF. JOHN J. McDONALD; PROF. E. P. JAMES; PROF. C. L. HOWARTH; PROF. C. A. EVERETT; J. B. MASASCHI; ROLAND E. DERBY, JR.; R. J. PEIRENT.

Monsanto Chemical Company Textile Chemicals Department

Boston 49, Massachusetts

Booths #64, #65

On display will be textile chemicals featuring: Dye Fixative 105, for improving fastness of direct dyes; Merlon thermoplastic resin emulsions for finishing; Catalyst AC, for speeding urea and melamine resin finishing; Resloom and Santaloom resin finishes.



Lawrence Portable Mixer

In attendance: E. W. GAMBLE, JR., Director; S. F. SYLVESTER, Assistant to the Director; F. K. BURR, Manager of Technical Service; W. R. BATTERSBY, W. E. BREAGY, S. W. BROWN, R. M. ENGLAND, R. N. FOSTER, R. GOW, W. F. HILL, E. S. LAMONT, J. T. ROSE, textile salesmen; C. F. BISHOP, A. J. GARD, F. J. POTTER, technical representatives.

National Aniline Division Allied Chemical & Dye Corp.

40 Rector Street
New York 6, New York

Booths #34 and #35

Dyes, textile processing assistants and organic detergents will be emphasized at this exhibit.

In attendance: H. J. DAIGNEAULT, Resident Manager; FRANK W. GAINEY, MICHAEL E. KEANE, ALBERT E. SAMPSON, DEAN W. SYMMES, THOMAS F. TANGNEY, JOHN L. WALDO, JACK F. WRIGHT, EDWARD J. ALLARD, RICHARD BAYER, JOHN E. HIRN, CLARENCE MILLIGAN, FRANCIS L. TOHER.

National Starch Products, Inc.

270 Madison Avenue
New York 16, New York

Booth #46

There will be a first showing of several new products especially developed for printing, finishing and sizing.

In attendance: J. F. FITZGERALD, Manager, Starch Sales; F. W. BRADLEY, Division Manager, New England Territory; H. C. OLSEN, W. H. STONE, E. J. MASLANKA.

New Bedford Textile Institute

New Bedford, Massachusetts

Booth #4

This display will consist of dyed, printed and woven fabrics designed and finished by students as well as student preparations of dyes and chemicals.

In attendance: EDMUND J. DUPRE, Associate Professor of Chemistry; JAMES L. GIBLIN, Associate Professor of Textiles.

Onyx Oil & Chemical Co.

Warren & Morris Streets
Jersey City 2, New Jersey

Booth #44

Company products will be exhibited and their properties illustrated.

In attendance: LEON P. BRICK, Vice-President of Sales; ALBERT R. JENNY, Sales Manager; DAVID M. MUSSER, Head of Textile Research and Development; PHILIP E. MACLEAN, New England District Manager; WILLIAM T. DONAHUE, Head of Testing Laboratories; PAUL D. JACOBS, Technical Demonstrator; MALCOLM P. COULMAN, New England and Western New York Representative; JOHN E. TREZISE, New England Representative.

Owens-Corning Fiberglas Corp. Textile Products Division

16 East 56th Street
New York 22, New York

Booths #62 and #63

Piece-dyed and screen printed Fiberglas decorative fabrics will be on display.

In attendance: RAY CAROSELLI, Director of Textile Research; R. I. BOSWORTH, Finishing Specialist.

Philadelphia Textile Institute

Schoolhouse Lane
Philadelphia 44, Pennsylvania

Booth #5

On display will be fabrics wholly made by students as well as photographs showing various steps in the preparation of these fabrics.

In attendance: RICHARD S. COX, Dean.

Proctor & Schwartz, Inc.

7th Street and Tabor Road
Philadelphia 20, Pennsylvania

Booths #42 and #43

This exhibit will feature a short, color sound film "Proctor Overfed Pin Tenter Finishing". Installation views of overfed pin tenters will be shown along with samples of fabrics finished in Proctor pin tenter ranges. The story of other Proctor equipment for the textile finishing field will be told on the pages of a mechanical book. There will be no machinery in operation.

In attendance: C. W. SCHWARTZ, III, Manager, Providence Office.

Ellen H. Richards Institute The Pennsylvania State College

State College, Pennsylvania

Booth #11

Photographs and posters illustrating some of the textile and detergency research in progress at the School of Chemistry and Physics will be exhibited.

Richmond Oil, Soap & Chemical Co., Inc.

1041-1043 Frankford Avenue
Philadelphia 25, Pennsylvania

Booth #61

Softeners, dispersing agents, scouring compounds, spinning oils, and hosiery knitting compounds will be on display.

In attendance: WILLIAM ALKUS, Vice-President; MORTON W. LEVI, Chemical Engineer; HENRY M. RUBIN, WILLIAM KAMAREK, Salesmen.

Royce Chemical Company

Carlton Hill, New Jersey

Booth #29

Samples of hydrosulfites, desizing agent, water repellent, finishing oils, gums, softeners and zinc oxide will be on display as well as an exhibit of the results accomplished with these products.

In attendance: ALBERT J. ROYCE, SR., President; ALBERT J. ROYCE, JR., Vice-President; HOWARD C. ROYCE, Vice-President; ROBERT S. GRIFFITH, Secretary; P. J. WOOD, Technical Director; J. PETSCHOW, Chief Chemist; IRVING J. ROYCE, WILLIAM FAYSSOUX, Southern Representatives; ARTHUR FINLEY, WILLIAM BROWN, New England Representatives; RICHARD JONES, Pennsylvania Representative; ARSENE BERUBE, New Jersey Representative.

Scholler Brothers, Inc.

Collins and Westmoreland Streets
Philadelphia 34, Pennsylvania

Booths #59 and #60

Samples of various soaps, oils, detergents and finishes will be shown, together with samples of fabrics treated with same. Particularly featured will be the Dura Beau Finishes for hosiery and the Schollerized Process for wool shrinkage control.

In attendance: L. M. BOYD, CHARLES H. SCHUETTLER, E. J. FITZGERALD, WM. JACKSON, JR., F. C. SCHOLLER.

The Sherwin-Williams Co.

295 Madison Avenue
New York 17, New York

Booth #7

Featured will be Sherdye Padding Colors on all types of fabrics and Sherdye Printing Colors as applied to drapery fabrics, illustrating their light fastness properties. Coronized Fiberglas as decorated with special Sherdye formulations for roller printing will also be on display.

In attendance: JOHN L. CRIST, President of Southern Dyestuff Corp.—Southern Agent for Sherdye; WILLIAM E. HOOKE, KENNETH J. BRODEN.

Socony Vacuum Oil Company

26 Broadway
New York 4, New York

Booth #40

South Florida Test Service

4201 Northwest Seventh Street
Miami 34, Florida

Booth #41

This display will feature large hand-

colored photographs of their exposure facilities, test samples on exposure at their inland proving grounds and salt atmospheric base, and instrumentation for measuring and recording solar radiation, both direct and under glass. In addition they will have a continuous showing of color slides depicting all phases of their service.

In attendance: WARREN W. SMITH, Chemical Engineer.

Swift & Company

165th Street and Indianapolis Blvd.
Hammond, Indiana

Booth #16

This display will include oils, soaps, glue, gelatin and wool as furnished to the textile industry.

In attendance: G. F. LONG, J. W. CUTLER, R. W. RAHE, Industrial Oil Dept.; R. W. YOCUM, L. L. BARNES, F. F. BURKE, Soap Dept.; C. S. YOUNG, A. W. BOYD, K. G. LOUGHRAN, Adhesive Dept.

Textile World

330 West 42nd Street
New York 18, New York

Booth #27

Textile publication.

United States Supply Co.

585 Broadway
East Providence 14, Rhode Island

Booth #56

Machinery, supplies and equipment used in dyeing, printing and finishing will be shown.

In attendance: H. E. WHITAKER, Treasurer; V. A. JONES, Vice-President.

Virginia Smelting Company

West Norfolk, Virginia

Booths #36 and #37

This booth will feature the reducing agents sulfur dioxide and sodium hydrosulfite. A surprise feature is planned for the entertainment of guests.

In attendance: W. F. LUCKENBACH, JR., Manager, Industrial Sales Department; A. K. SCRIBNER, JR., J. R. ELDRIDGE, F. W. BINNS, J. B. JOHNSON, G. V. RITTENHOUSE, E. H. KEYS, H. B. PETERSON, Sales Representatives; H. B. CHANNON, Manager, Technical Service.

Westinghouse Electric Corp.

246 East 4th Street
Mansfield, Ohio

Booth #6

Winthrop-Stearns, Inc.

1450 Broadway
New York 18, New York

Booth #45

Exhibited will be a new dye intermediate known as 1,phenyl 3 carbethoxy pyrazolone 5. This product is described in the U. S. Tariff Commission Report as the ethyl ester of 1, phenyl pyrazolone 5, 3-carboxylic acid. Also shown will be samples of technical literature on phenyl methyl pyrazolone, known to the trade as Developers-Z "300%."

In attendance: BERNARD M. FISHER.

Jacques Wolf & Co.

Passaic, New Jersey

Booth #17

Chemical specialties for textile processing will be exhibited, including the following products: Hydrozin, for stripping acetate, wool and nylon; Hydrosulfite AWC, for stripping and discharge printing; Hydrosulfite of Soda Conc., for reducing vat dyestuffs; Parnol, an alkyl aryl sulfonate over 41% active; Superclear, for fine printing; wool oils and finishes; Amprozyme, for desizing; Lomar PW, a dispersing agent and retardant; Oratol L-48, a sulfonated amide; Monopole Oil; Bensapol; Gums—Arabic, Karaya, and Tragacanth.

In attendance: G. J. DESMOND, Secretary and Sales Manager; F. L. FASSNACHT, Northern New England Representative; C. I. LAKEY, Southern New England Representative; WALTER DEUBLE, Assistant Sales Manager; G. W. APSEY, Chemist; M. F. COSTELLO, G. J. GRADY, G. W. SEARELL, C. E. WRIGHT, New York and New Jersey Representatives.

EXHIBITORS BY BOOTH NUMBER

Booth Number	*Exhibitor*
2	Bradford Durfee Technical Institute
3	Lowell Textile Institute
4	New Bedford Textile Institute
5	Philadelphia Textile Institute
6	Westinghouse Electric Corporation
7	Sherwin-Williams Company
8	Lawrence Pump and Engine Company
9, 10	Calco Chemical Division, American Cyanamid Company
11	Ellen H. Richards Institute, Pennsylvania State College
12, 13, 14, 15, 20. 21, 22	American Association of Textile Chemists and Colorists
16	Swift and Company
17	Jacques Wolf and Company
18	Institute of Textile Technology
19	Daily News Record
23	E. F. Drew Company, Inc.
24	Ciba Company, Inc.
25	Geigy Company, Inc.
26	American Dyestuff Reporter
27	Textile World
28	Atlas Electric Devices Company
29	Royce Chemical Company
30	Instrument Development Laboratories
31, 32	General Dyestuff Corporation
?	Dow Corning Corporation
34, 35	National Aniline Division, Allied Chemical & Dye Corp.
36, 37	Virginia Smelting Company
38	Intersectional Contest Committees
39	Brabender Corporation
40	Secony Vacuum Oil Company
41	South Florida Test Service
42, 43	Proctor & Schwartz, Inc.
44	Onyx Oil and Chemical Company
45	Winthrop-Stearns, Inc.
46	National Starch Products, Inc.
47	George A. Goulston Company
48	Hart-Moisture-Meters, Inc.
49, 50	E. I. Du Pont de Nemours & Co., Inc.
51	Carbide and Carbon Chemicals Corp.
52, 53	Intersectional Contest Committees
54	Amalgamated Chemical Corp.
55	Atlantic Chemical Company
56	United States Supply Company
57, 58	Arnold, Hoffman Company, Inc.
59, 60	Scholler Brothers, Inc.
61	Richmond Oil, Soap and Chemical Co.
62, 63	Owens-Corning Fiberglas Corp.
64, 65	Monsanto Chemical Company

Abstracts

OF TECHNICAL PAPERS

To be Presented at Portsmouth Convention

"The Water Pollution Problem"

LYMAN COX

Engineering Department, E. I. du Pont de Nemours & Co., Inc.

POLLUTION interferes with many necessary and desirable uses of water and should, therefore, be a matter of concern to everyone who is interested in preserving this great natural resource.

The effect which a given waste will have on the water naturally depends principally upon the characteristics of the waste.

Industrial waste may have the same effect on a water course as sanitary sewage except that industrial waste rarely causes bacterial pollution. Also, industrial waste may alter water quality in a number of other ways.

In attempting to protect waters which are now clean and to restore waters which have been affected by excessive pollution, an effort is usually made to reduce existing pollution and control new sources by requiring that both industries and towns provide adequate treatment for expansions or new installations.

Industry's civic duty in pollution abatement are:

1. To develop full information about its own waste and take necessary corrective action.
2. To educate its own employees.
3. To cooperate with municipal officials.
4. To cooperate with State, Interstate and Federal control agencies.
5. To keep the public advised concerning the problem and the progress which is being made.

It is important to remember that leaks and spills, when added together, account for a sizable share of industrial pollution. It is absolutely essential that the people who push the buttons, pull the levers and turn the valves understand how their actions are related to pollution and the things which they can do to decrease the amount of waste which is discharged from the plant. The key to this is education.

"The Economics of the Textile Industry"

D. HARRY ANGNEY

Federal Reserve Bank of Boston, Mass.

THE economics of the textile industry are basically no different from those of any industry, but at times we may think that they have more ramifications. Textile manufacturers and their suppliers are actively engaged in solving the *basic economic problem* of how to allocate scarce material and human resources to satisfy unlimited human needs.

Merchandising, or marketing, is the principal subdivision of this economic problem, according to those who stress the importance of anticipating and influencing consumer preferences. These enterprisers are constantly striving to capture a portion of the consumer market by developing new products and maintaining the quality of their established lines. They would like to have a protected market. High productivity or a low unit cost of production is the most important subdivision of the general economic problem in the opinion of the production man. He is interested in how fast he can effectively introduce new machinery into his plant, pay for it, and improve the quality of his products.

The assumption of risk by all businessmen—from the supplier of raw material to the retailer—coordinates both points of view and enables consumers to purchase products to satisfy their needs.

Competition still provides the check and balances for the direction of the textile industry and its complementary and supplementary industries. The division of labor and specialized skills required to satisfy the myriad number of consumer preferences enables a large group of small enterprisers to contribute to total output. The paradox in the textile industry and its related fields of enterprise is that cooperation for stable conditions is required in a competitive framework which thrives on uncertainty and shifts in style and fashion.

It is more logical today to discuss the economies of the textile industry because fiber-blending, multiple-purpose machinery, and new finishes have broken down its traditional divisional lines. The textile industry has begun to encounter more intensive competition from substitute products.

Employment and payrolls are the economic issues for the community which has assumed a new role in the structure of competitive industry.

The pervasive effect of price analysis extends the economics of the textile industry across the fields of agricultural policy, international trade, public finance, labor relations, corporation finance, marketing and other specialized economic subjects.

"Control of the Caustic-Silicate Ratio in Peroxide Bleaching Liquors"

K. D. BALLOU, J. J. ROARKE, G. M. GANTZ

Lincoln Bleachery and Dyeworks Div. Lonsdale Company

IN continuous peroxide bleaching ranges used for cotton fabrics, the Na_2O-SiO_2 ratio in the peroxide saturating liquor is rather critical. Insufficient caustic soda will promote deposition of silica in the equipment whereas excess caustic accelerates the decomposition of peroxide and results in poor bleaching. For the most part adequate control of this ratio is maintained by use of proportioning pumps and periodic titrations of total alkalinity. When a wide range of fabric styles and weights are being processed, some residual caustic soda may be left on the goods and enter the saturator. The total alkalinity will increase, but it is no longer possible to control the caustic-silicate ratio.

A rapid volumetric procedure has been developed for determining the caustic-silicate ratio in the peroxide saturator. The method is based upon the formation

of sodium fluosilicate from hydrous silica and sodium fluoride. Many ions such as iron, calcium, and phosphates interfere, but the procedure has proved satisfactory in the plant. Calculations are simplified by use of a nomogram.

"Control of J-Boxes and Steamers in Continuous Bleaching"

C. W. BOWDEN, JR. and DREW B. DAUBERT

Industrial Division
Minneapolis-Honeywell Regulator Company

THE subject paper deals with the problems of control encountered in continuous bleaching. Field experience on duPont J-boxes, Becco J-boxes and Mathieson Steamers has been drawn upon to outline those methods found most satisfactory.

The duPont J-box and Mathieson Steamer are noted as relatively simple devices to control. The Becco unit, however, presents a considerably different problem. Its fundamental design difference requires closer attention to the details of cloth level and external influences. Consideration is also given thermocouple location, mounting methods and circuit wiring for direct, averaging or differential temperature readings.

The paper is concluded with a treatment of instruments and accessory items best suited for the application. Stress is also placed on the maintenance of conditions external to the J-box or steamer, to reduce the number of variables exerting an influence on the bleacher control system.

"A New Type of Nonwoven Fabric"

JOHN F. RYAN

The Kendall Company

A WIDE variety of nonwoven fabrics has been introduced by the textile industry over the last fifteen years. They have all had one thing in common: at least some of the fibers are adhesively bonded to one another, thus limiting to some extent the fiber freedom.

This paper describes a new type of nonwoven fabric containing no bonding agent and with no interfiber fusion. Since the integrity of the fabric depends solely upon fiber entanglement and interlocking, such a material possesses properties markedly different from the properties of adhesively bonded fabrics.

The most obvious property is a relatively large degree of extensibility and conformability, coupled with high porosity and low density. Such a combination makes this product particularly suitable as a base for coating, saturating, and impregnating which can be done using conventional equipment. The material can also be dyed, starched, slit, etc., in the customary manner or with minor machine adjustments.

This product has numerous interesting applications in the industrial and consumer fields.

"Package Dyeing"

ERNEST L. CASWELL

Ciba Company, Inc.

AN attempt will be made to veer away from the usual information which is generally unfolded in a treatise under the heading of "Package Dyeing." The subject matter will be the consideration of the many phases that enter into the picture of producing a satisfactory dyeing.

Such items as material (yarn), winding, carrier (tube, spring, etc.), extracting and drying will be reviewed. We all realize that these play a very important role in dyeing. Therefore, it is these phases which will be emphasized along with dyeing.

The merits of the ⅝ inch tube, 1⅝ inch tube, Franklin Spring and Barber Coleman cheese is also considered along with proper winding.

This is followed up with an "over-all" picture of what the average dyer expects from his dyeing machines. It concludes with his choice of the proper extracting and drying equipment to fit his particular requirements.

"Studies with Titanium as an Agent for Imparting Durable Fire Retardancy to Fabrics"

A. E. JACOBSEN, W. F. SULLIVAN and I. M. PANIK

National Lead Co.
Titanium Division

THE various types of fire-retardant treatments are cited. These can be classified as the nondurable type which employ well-known water soluble salts, the semidurable type which employ nitrogenated phosphates, and the durable type which can be further subdivided as organic and inorganic. The organic type employs a resin as a binder for the other components. Brominated polyphosphate ester, which has received limited evaluation, is also in this class. Representative of the inorganic type are the stannates and compounds in the titanium-antimony systems.

Previous studies employing solutions of titanium-antimony chloride-acetate are discussed as an introduction to results reported using silicates in the neutralization bath to minimize afterglow. Commercial brands of sodium silicate were investigated and an optimum amount determined. It has been determined that fabrics of various weights can be successfully fire-retarded by means of the titanium-antimony silicon treatment.

Fire-retardant properties and analyses of four-ounce sheetings are presented showing retention of the agents through twenty-four launderings.

Studies in connection with fire-retardant mechanisms are reported and explanations proposed. The studies are supplemented with micrographs.

"Mothproofing-Detergent Combinations"

H. C. BORGHETTY, OPAL SHERBURNE, and WINIFRED PARDEY

General Dyestuff Corporation

THIS paper covers various types of mothproofing agents and indicates that the loss of some of the wool fabrics market to synthetic fibers could be somewhat avoided by the use of mothproofing agents. A new approach to the problem is offered by combining a substantive cationic mothproofing agent with nonionic synthetic detergents to give combinations that will serve simultaneously as mothproofing agents and washing agents. This new development can be applied both in textile mills or in the household, because of the low temperature at which the system can be made to function. Fabrics washed with specially prepared quaternary mothproofing agents plus ethylene oxide condensates can be stored indefinitely without danger from moths and carpet beetles.

"Stripping of Wool Dyes with Protection Against Chemical Damage"

E. A. LEONARD and L. BECK

The Alexander Smith and Sons Carpet Co.

THIS paper describes a commercial method of stripping dyes from wool without the chemical degradation usually experienced. The mechanism by which this is accomplished is to split the disul-

fide linkages and rebuild them with ethylene dibromide, which forms a new linkage more resistant to reduction.

The effectiveness of this protective modification is shown by data on wool fiber strength, alkali solubility, and an abrasion test on pile floor coverings.

Application of the recording spectrophotometer to quantitative measurement of dye removal is discussed and illustrated.

Variations of the protective stripping process are described relative to their effectiveness on particular dyes.

"Dyeing of Wool With Vat Colors with Particular Emphasis on the Anthraquinone Types"

ARTHUR E. WEBBER

National Aniline Division
Allied Chemical and Dye Corp.

IT has been found that by carefully observing a number of critical features which are collectively responsible for the success of the dyeing process, practically all of the anthraquinone vat colors can be dyed on wool in light, medium and dark shades including black, without undue adverse effect on the tensile strength, elasticity and hand of the fiber. For the same reasons as in the dyeing of cotton, rayon, and silk, both anthraquinone and indigoid types are needed for coloring wool in a complete range of shades of maximum brilliancy and fastness properties.

Vat colors have very good affinity for wool. While they exhaust somewhat slower than on cotton, they build up to a greater depth. As a class, they have good level-dyeing properties and are less selective than the acid and chrome colors with regard to dyeing tippy wool or mixed stocks.

Vat colors properly applied to wool and other animal hairs are faster than any other class of dyestuff currently in use, and produce considerably brighter shades than do the chrome dyes and metallized acid colors. A careful selection of vat colors applied to wool under favorable conditions permits the development of a full range of shades of a Fade-Ometer rating at least equal to AATCC Standard No. 6, even in light shades, and of excellent fastness to all wet-processing operations, including peroxide bleaching and crossdyeing in a boiling sulfuric acid bath. With few exceptions, these shades are fast to an alkaline chlorination treatment such as the Harriset process.

"The Worsted Mill Laboratory"

CARL E. MEDDE and PALMER E. MORALLY

Lorraine Mfg. Co. and
Wanskuck Company

THE worsted mill laboratory no longer is an analytical chemical laboratory. True, chemical tests as were carried out in the past continue to be made, but many more are made in accurate mechanical and electrometric apparatus yielding quicker and better results. Dye fastness problems have become increasingly important especially with blends and applications methods of laboratory origin give greater insurance of a well-matched shade.

Microscopy occupies a more prominent place both for the natural and synthetic fiber recognition and for the well-known fiber diameter measurements.

Physical testing of top, yarn, and fabric has become one of the important functions of the laboratory. The standard conditions under which such tests are carried out make this type of test easily duplicated and permits the use of statistics in quality control of manufacture.

Manufacturing process research has greatly benefited from the development of new and improved machinery; but in the final selection of competitive machines, both from a performance and economical standpoint, the analytical data obtained from the improved facilities of a modern laboratory is invaluable in reaching a favorable decision.

"The Finishers' Position in Regard to New Synthetic Fabrics"

FRANCIS S. RICHARDSON

Waldrich Company

A BRIEF review of the dyers', printers' and finishers' position in regard to the natural fibers before the invention and development of man-made ones. The part played during the past years by the regenerated cellulosic group, their present position and possible future.

The introduction of the true synthetics and their course of development. A discussion of the mechanical and chemical problems engendered by these various fibers with regard to some of the many factors involved in the finishing operations.

The possibility of further additions to the synthetic group with comments concerning the finishers' needs, attitudes, and responsibilities.

"The Printing of Synthetics—Trends and Mill Problems"

ARTHUR F. McLEAN

Glenlyon Print Works

THE conception generally shared by the public that a synthetic fabric is produced as a substitute for a fabric made from natural fibers is gradually passing. The wide range of synthetic fabrics now available has clearly shown that certain constructions can definitely stand on their own merit.

The printing of synthetics has passed through many growing pains. The early problems developing around irregularities in the first synthetics have all been brought into line. Today's problems are usually brought about by our desire to cause many fabrics to respond in defiance to the laws of nature. If we set up stresses and strains within the fabric in its preparation for printing and then attempt to perform a precision operation, such as printing an intricate pattern, we might as well admit we asked for trouble when it does occur.

The possibility of textile printing ever being in a static position is rather remote. Therefore we must always be in the process of some evolution or trend. There is a definite trend which may spell a considerable problem for the printers. The demands for all-purpose wearing apparel is more evident each season. Colors and fabrics must not only stand the "Sunday best" appearance test, but the ravages of nature and the laundry mat.

The raw materials at hand are all tested and proven worthy. The problem will be to combine them and satisfy all specifications.

"Nylon Dyeing—Theory and Practice"

G. T. DOUGLAS

Imperial Chemical Industries Ltd.

THE theory of the dyeing of nylon is presented in a relatively simplified form and the part that the chemical groupings present play in dyestuff uptake is discussed. The dyeing behavior of nylon is compared and contrasted with that of wool. The value and limitations of the various dyestuff ranges for nylon are outlined and some of the difficulties that are met in practice in the dyeing of this fiber are dealt with. A chrome dyeing technique developed as a result of the fundamental researches into the dyeing mechanism of water soluble dyestuffs on nylon is given and also the dyeing be-

havior of vat and azoic dyestuffs is discussed. Finally, the problems involved in the coloration of wool/nylon union materials are stated and recommendations presented for dyeing techniques to be employed.

"Studies in Textile Printing: III. Applications"

R. D. GREENE, A. F. KLEIN, F. FORDEMWALT
Calco Chemical Division
American Cyanamid Co.

AN analytical method for determining the amount of vat dye on a printed fabric has been developed. The amount of dye present on the fabric immediately after printing and the amount present when aging, oxidizing and soaping have been completed are determined by a solvent extraction.

In conjunction with the strength of the print obtained, these data are used to calculate the "Percentage Fixation," the "Color Efficiency," and the "Printing Efficiency." A comparison of several prints with a given standard may thus indicate the effect of each variable and the particular manner in which the variable is affecting the ultimate print strength.

Examples show that the amount of dye deposited varies widely with the nature of the vat gum and that a simple comparison of print does not give a true picture of the economics of two or more gums. These differences in the amounts of dye deposited are readily obtained by the analytical method.

Examples of varying degrees of fixation under different aging conditions show the importance of this operation and the way in which the effectiveness of any changes made can be accurately measured.

"Odor Prevention in Resin Treated Fabrics"

L. A. FLUCK
Textile Resin Dept.
American Cyanamid Co.

TEXTILES that have been treated with thermosetting aminoplasts, such as urea and melamine formaldehyde resins, develop unpleasant odors under certain conditions. A mechanism for the formation of odor in fabrics that have been treated with these nitrogen containing resins is proposed. The addition of an inexpensive bath additive to prevent odor formation in the treated fabric has been proven to be effective under a wide range of conditions. A sensitive reproducible odor test for resin treated fabrics has been developed.

"The Printing of Soil Cloth"

CARL Z. DRAVES and OPAL L. SHERBURNE
General Dyestuff Corporation

DURING World War II the U. S. Bureau of Ships insisted that a cotton soil cloth could best be prepared by a printing process, and General Dyestuff Corporation was asked to assist in the preparation of such a cloth. Using the techniques of the textile printer, a practical printable paste containing the usual soil ingredients was developed by the authors, and cotton soil cloth of great uniformity and reproducibility was printed for the use of the Bureau. There was so much demand from others that the production and distribution of printed soil cloth has been set up on a commercial basis through the co-operation of the AATCC, which receives a royalty on all that is sold. Printing of soil has now been extended to other fibers, including nylon, rayon, wool, and silk.

Details of the formulation of the paste are presented.

"The Measurement of Static Electricity on Fabrics"

MASON HAYEK and F. C. CHROMEY
E. I. duPont de Nemours & Co., Inc.

DURING the course of a study of problems arising from the static electrification of textile materials, it became necessary to devise a means of measuring static electricity on fabrics. This paper describes the instrument that was developed for the purpose and summarizes some of the pertinent information on static electricity.

The instrument combines a machine for generating charges on fabrics and a means of measuring those charges. The test fabrics are mounted on a cylinder and charged by friction against a second surface, and the charge is measured electronically. The working parts of the instrument are housed in a metal box to permit humidity control. Examples of tests on fabrics treated with antistatic agents and untreated controls illustrate the kind of data obtained with the instrument and show how the static propensities of the test specimens depend upon the rate of decay of electrostatic charge on the surfact, that is, on the surface electrical conductivity.

"The Relation Between Fiber Properties and Apparent Abrasion Resistance"

D. D. GAGLIARDI and A. C. NUESSLE
Rohm and Haas Co.

THE modification of fabric properties brought about by treatment with stabilizing and creaseproofing compounds has been shown to be related directly to changes in stress-strain properties of the fibers. By use of accelerated abrasion testing machines, it was noted that the apparent abrasion resistance of the modified fabrics was greatly lowered by the chemical treatment, the extent of accelerated machines, however, present an erroneous picture of fabric wearing qualities, since the test specimen is subjected to very high repeated cyclic stresses and strains which are relatively uncommon in the normal wear of a finished garment. Thus the role of the improved fiber elastic recovery is not brought out by the common laboratory tests, these being sensitive only to the reduction in extensibility. By use of the Schiefer Abrasion Machine at decreasing applied loads, it has been found that the difference between an original and a modified fabric diminishes until at some low load, the modified fabric has apparently higher abrasion resistance than the untreated rayon, by virtue of the higher elastic recovery of the modified fibers.

Practical wear tests have been made on a number of fabrics which has been treated with stabilizing and creaseproofing compounds. No correlation was found between such tests and accelerated abrasion machines. The results, however, do support the above observations that the abrasion resistance at low loads (low stresses and strains) is a more important criterion for predicting wearing qualities. The practical wear results have also shown the importance of wet abrasion resistance, which is greatly increased by stabilizing and creaseproofing compounds applied to rayon fabrics.

"Improved Fatty Intermediates for Textile Finishing"

L. J. ARMSTRONG
Armour and Company

IN recent years considerable attention has been devoted to new developments in auxiliaries and finishing agents. Less attention has been paid to the fatty intermediates available for that purpose. Largely, improved intermediates have been made available as a result of the commercial development of two basic

processes: fractional distillation and frictional crystallization of fatty acids.

Fractional distillation has permitted the separation of acids of varying chain length, whereas, fractional crystallization has made possible the separation of fatty acids on the basis of degree of saturation. The products obtained from these processes which are of particular importance to the textile finishing trade include, among others, technically pure saturated fatty acids, oleic acid containing only minor amounts of linoleic and commercial stearic acid essentially free of unsaturated acids. These in turn have lead to the development of special finishing effects and freedom from color and odor development.

Additional derivatives, such as fatty alcohols, amines and amides, have been made available commercially as intermediates for the synthesis of finishing agents for softening, water repellency and related textile applications.

"The Inter-Relationship of Functional Fabric Properties Resulting From the Use of Special Textile Finishes"

J. FRED OESTERLING

Philadelphia Quartermaster Depot

THE application of special textile finishes for the attainment of certain desired functional properties produces both primary and secondary fabric characteristics. For the purpose of this paper, these characteristics may be classified as follows:

(1) *Primary*—Water resistance; fire resistance; mildew resistance; shrinkage control; resistance to chemical or photochemical degradation; crease resistance; and color or shade characteristics.

(2) *Secondary*—Breaking strength; tear strength; sewability; seam strength; hand; drape; flexibility at low temperatures; nontackiness; resistance to crocking; color fastness; resistance to perspiration; moisture vapor permeability; durability of the finish to laundering; maintenance of strength characteristics during laundering; durability to leaching; stability to weathering; stability to aging or long-term storage; wear resistance; nontoxicity; and freedom from objectionable odors.

In general the attainment of any one of the primary characteristics through the application of special finishes would be a relatively simple matter were it not for the complicating effects produced on other primary and secondary characteristics. These concomitant effects of finishing treatments become of paramount importance in military fabrics where performance requirements are normally more rigorous than for civilian textiles.

The cooperative efforts of research laboratories, technologists and textile mills have gone far in attaining a good balance of those factors attendant on the production of satisfactory finishes. However, the ultimate goal of imparting, through the use of finishing treatments, specific functional characteristics to a base fabric without detracting materially from its inherent good qualities is yet to be reached.

A list of special finishing treatments for a variety of fabrics will be presented with special attention given to those factors wherein improvement needs to be made.

LAPEL BUTTONS

for

AATCC MEMBERS

•

These buttons bear the Seal of the Association and may be purchased by members in good standing from the National Secretary at $2.00 each.

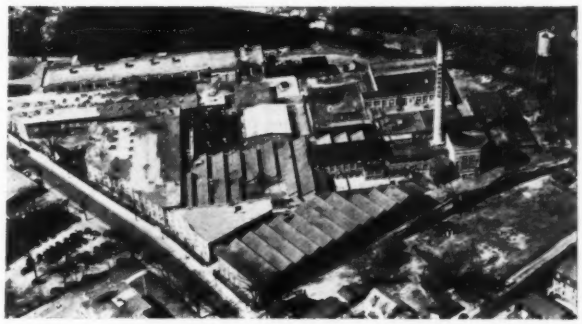
•

DR. H. C. CHAPIN
LOWELL TEXTILE INSTITUTE
LOWELL, MASSACHUSETTS

THE WET PROCESSING INDUSTRY IN THE RHODE ISLAND AREA

ARTHUR E. HIRST

IT is unnecessary to give definite figures for the area covered by the Rhode Island Section of the American Association of Textile Chemists and Colorists to form an idea of the high concentration of finishing plants therein. One need only glance at a map of the United States to be impressed by this concentration as compared with other sections,—the section comprising the state of Rhode Island, Bristol County in Massachusetts, and Connecticut east of the Connecticut River. This "crowded" condition, if one wishes to consider it so, probably arose from the early settling of finishing plants throughout New England, and particularly in the area under discussion. As a whole, the industry here may well be proud of its ability to look far back into the past to its conception and at its stability in the face of changing conditions. Our word picture may start with a short history to illustrate these points.



The Apponaug Company, Apponaug, Rhode Island

The United States Finishing Company, Norwich Branch
Norwich, Connecticut

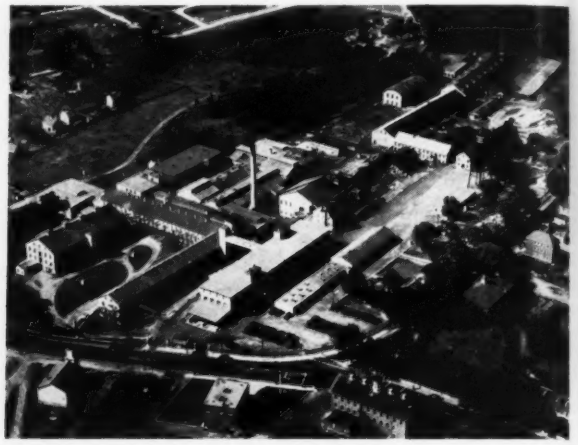
Having in mind the history of power sources, it is natural to think first of water power, the ancient antecedent of steam and electricity. New England was blessed with many streams, large and small, to attract the founding of plants requiring power for machinery and relatively large volumes of processing water. Such localities in many instances were practically in the wilderness, such as was Slatersville in 1806.

In the earliest days, spinners who located in these areas offering abundant or at least sufficient water power were too occupied with their own problems of textiles to consider the installation of bleacheries. Even where the ocean shore line was close at hand to facilitate receipt of materials required for finishing, little consideration was given for a long time to the idea that, such expansion might be desirable. However, the value of soft and abundant water gradually became impressed on financial interests who recognized also the importance of proximity of bleacheries to sources of yarn and grey cloth, and before long the nucleus of our industry came into being. Naturally over the years some of the small units com-

Providence Dyeing, Bleaching & Calendering Co.
Providence, Rhode Island

Sayles Finishing Plants, Inc., Sayles Bleacheries Division
Saylesville, Rhode Island

The United States Finishing Company, Sterling Branch
Sterling, Connecticut



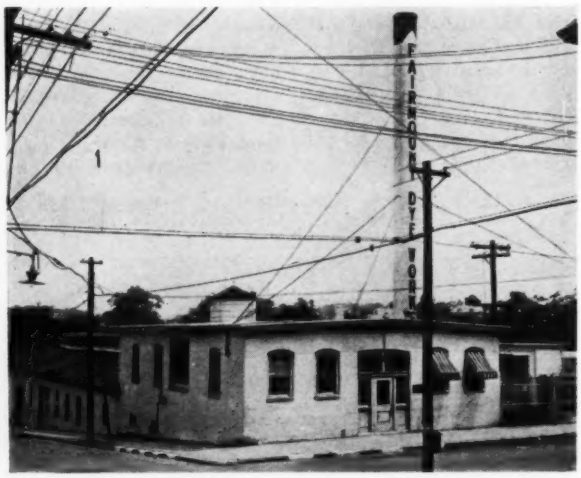
Cranston Print Works Company
Cranston, Rhode Island

bined to form larger ones. The dyeing and bleaching industry in New England started in Pawtucket in 1805 under the name of Robert D. Mason Co., soon encouraging the establishment of other units throughout the Providence area. Of great and almost sentimental interest arising in this area were the founding of the Providence Dye House Company and the Valley Bleachery in Providence. In 1814 they were amalgamated as the Providence Dyeing, Bleaching and Calendering Company, incorporated in 1842 and still "going strong" as a well considered organization.

New Bedford and Fall River originally came into some prominence as to finishing plants because of a combination of water power and navigable waters, but not until water became exhausted in interior points. The Quequechan River, while it had a fall of one hundred and thirty feet, was only one and one-half miles long and soon became insufficient to permit the city of Fall River to hold its position as a user of water power. However, the two cities were fortunate in being able to bring in coal by tidewater, in consequence of which their importance as centers for dye works increased.

In the year 1821 the Fall River Iron Works Company was organized by financiers interested in textiles, and not long after the American Printing Company was founded as a running mate, being in 1835 the leading light in the production of prints by the roller process. Thus the old block prints were quickly superseded. While the Iron Works Company was often referred to as such until liquidation over a century later, it eventually was converted into a cotton mill to supply the print works with part of its consumption of cotton cloth. Yankee ingenuity went to work in the improvement of finishing processes and production increased. Other printing plants were started, resulting in ultimate leadership of the section in such lines. In 1845 the old "pitchback" wheels in the Robeson print works were replaced by the first water turbines, bringing about an 88% increase in efficiency. The effect of skilled labor, reputation and economies for many years operated to offset the disadvantage of long hauls, and in 1935, for example, 75% of the cotton goods manufactured in the southeast was sent to New England for finishing. However, such advantages were nullified by the development of dyeworks in other sections. Nevertheless a number of old established plants in the Rhode Island section have retained the original units while starting new ones in the South, indicating the advantages persisting here.

There has been a rather widespread idea that the quality of processing water in this area is superior to that in the South, resulting in the shipment of goods north for finishing. This is not altogether true, since the southern plants make use of softening and filtering equipment successfully. The reasons for shipping north are based on economic considerations and one must give credit to the section when one considers the greater restrictions in labor conditions in some of the New England states. During recent years as competition among textile centers has become increasingly keen, sentimental reasons for the plants' remaining in the



Fairmount Dye Works, Woonsocket, Rhode Island

The Glasgo Finishing Co.
Glasgo, Connecticut

Enterprise Dye Works, Inc.
Woonsocket, Rhode Island

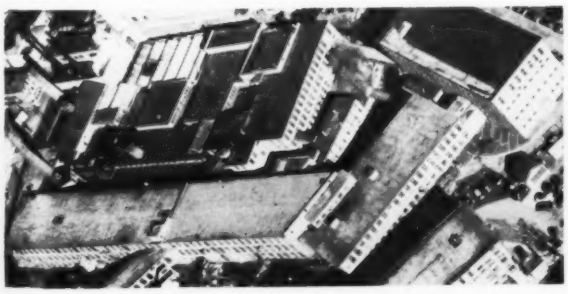
Rhode Island section where they were born, or for that matter in any designated part of New England, have had to be abandoned to ensure survival, so it must be assumed that a dye works' persistent determination to remain where it started is based on important advantages inherent in the locality. Witness just two examples —the Providence Dyeing, Bleaching & Calendering Company, founded in 1814, and the Cranston Print Works in 1824, both still outstanding in their fields. Of course we must give credit to the wise management of such long lived companies in keeping them in healthy competitive positions, as is the case with many of our other constituents, but such efficiency must be backed by geographical advantages. While in some instances the older finishing plants have established branches in other territories, that territory represented by our Rhode Island Section may well take pride in the mother plants' remaining in their places of origin.

Perhaps we are entitled to point out another proof of the desirability of our section,—the fact that a number of old established companies have remained in operation after being purchased by others.

It is true that during the past several decades some of our finishing plants have been liquidated, much to the temporary disadvantage of the communities involved, but in most instances this has been due to the effect of market conditions on their large production capacities. For example, the very old and respected American Printing Company, whose print works division was founded in 1835, was liquidated after one hundred years of continuous operation. Market conditions arising from too great a production of prints made difficult the profitable operation of such a large unit—in this case one which turned out 1,000,000 to 1,500,000 yards of solid

J. & P. Coats (Rhode Island) Inc.
Pawtucket, Rhode Island

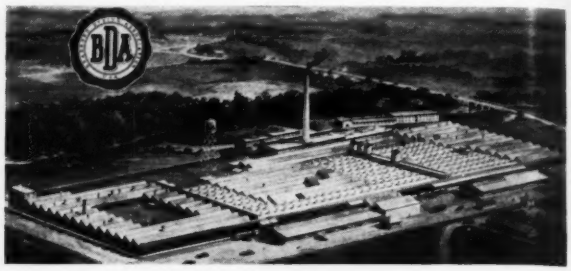
Slatersville Finishing Company, Slatersville, Rhode Island



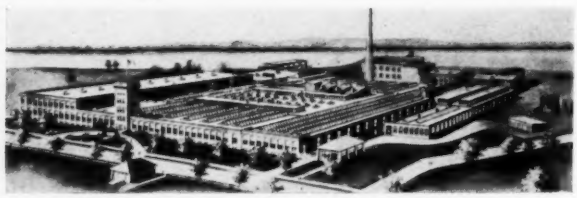
The United States Finishing Company, Queen Branch
Providence, Rhode Island

Mount Hope Finishing Company
North Dighton, Massachusetts

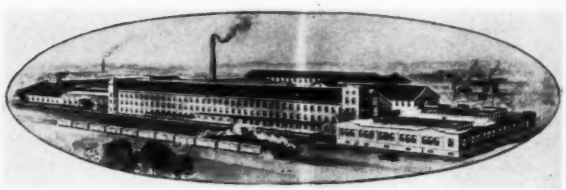
Kenyon Piece Dyeworks, Inc.
Kenyon, Rhode Island



Bradford Dyeing Association (U. S. A.)
Bradford, Rhode Island



Sayles Finishing Plants, Inc., Glenlyon Print Works Division
Phillipsdale, Rhode Island



Franklin Process Company, Providence, Rhode Island

shades and prints per day. Other units of the industry, some only specific departments of a parent company, followed the same course, but newcomers came in and kept the section in a healthy industrial state.

To point out the importance of this area in the matter of roller printing, we take the liberty of quoting figures published in an excellent authority on textiles, "The New England Cotton Textile Industry" by J. Herbert Burgy (Waverly Press, 1932). At the time of publication, of the 262 roller printing machines in operation, 172 were in communities included in our section. While a considerable percentage of these machines have ceased to be operated, most are still running and have excellent prospects of continuing.

As compared with other areas, screen printing is relatively new here, but there are a few important ones which have survived recurrent depressions and are turning out excellent qualities in very considerable yardages of cotton and synthetic cloths.

While lace manufacturers might ordinarily be viewed under the heading of textile manufacturers, the goods must be bleached and often dyed, so may properly come into consideration as wet finishing plants. Here the Rhode Island Section may well be proud of being the outstanding lace section of the United States. Of the many lace plants in the area, all are located in Rhode Island. The quality of the products is very high and, with reasonable tariff protection, the goods should continue to compete successfully against foreign imports.

Though not produced in yardages comparable to other types of fabrics, a very important type of finishing, one almost absolutely necessary in every kind of machine fabrication and building, is that of tracing cloths and similar goods. Here Rhode Island produces a very large percentage, with little competition since World War I coming from any other source. The extreme care required in bleaching and finishing of such goods is unmatched in other textile lines, as evidenced by the requirement of absolute freedom from defects such as minute dirt specks, poor or impermanent translucence, etc. Similar in general application of processes but with less rigid requirements is the production of finished bookcloth and shade cloth, in which Rhode Island occupies an important place.

In 1949, Rhode Island's cotton finishing total was 664,989,000 yards, giving them fourth place in the nation and led only by South Carolina, Massachusetts and North Carolina. In the rayon field, Rhode Island finishing plants were third in New England and fifth in the nation, producing 125,767,000 yards. Adding to these

American Velvet Company
Stonington, Connecticut

Fruit of the Loom, Inc., Pontiac Division
Pontiac, Rhode Island

Max Pollack & Company, Inc., Willimantic Plant, Willimantic, Connecticut

the notable quantities from the rest of our section, it will be seen what an outstanding position is occupied by the small area.

While other sections of the A.A.T.C.C. may lay claim to very early origins of dyehouses devoted to the processing of woolen and worsted goods, the Rhode Island section also may trace back to early days a noteworthy record. In 1828 a charter was granted the Hartford Manufacturing Company in Thompsonville, Connecticut, to manufacture ingrain carpets, the yarns presumably being prepared there for weaving. The company prospered for many years, eventually starting a branch at Tariffville just outside the boundaries of the area under discussion.

While plants devoted exclusively to dyeing and finishing woolen and worsted goods are numerically less than such companies in the cotton and rayon field, many spinners and weavers have their own dyehouses in this area. Providence, and particularly Woonsocket, are very important wool manufacturing centers and other communities are the homes of well-known plants of this type, some of them having been started forty to fifty years ago. While the individual units of the industry here are not as large as some in other parts of New England, they are noted for their high quality work and management, and some of the corporations having very large plants in other sections also have branches in several communities here.

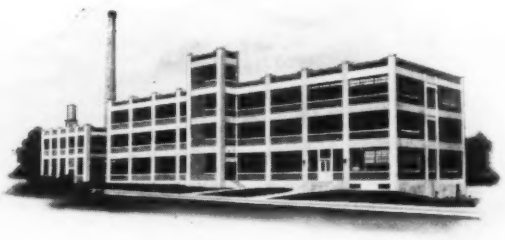
Looking ahead to the necessity of preparing men and women to fill important positions in manufacturing and finishing mills, we are fortunate in having located here some excellent schools specializing in all branches. They are Bradford Durfee Technical Institute, New Bedford Textile Institute and Rhode Island School of Design. They offer instruction in the sciences with special reference to the needs of the mills, and graduates will be found in positions of responsibility throughout the nation.

A novel and noteworthy educational institution is "Crown College," a part of Crown Manufacturing Company located in South Attleboro, Massachusetts. Here volunteers are given instruction in the various processes carried on by this forward-looking corporation.

The following table shows the diversity of finishing plants in the Rhode Island Section as compiled in Davison's "Textile Bluebook":

Bleachers, dyers and finishers of cotton yarns, woolen and worsted yarns, narrow fabrics, ribbons, rayon, nylon and skein silk	19
Bleachers, dyers and finishers of cotton piece goods, hosiery and knit goods, rayons, nylon, silk and mixtures	80
Package dyeing of yarns	8
Bleachers and dyers of raw cotton, wool and worsted tops	12
Dyers and finishers of woolen and worsted piece goods	9
Mercerizers of cotton yarn	5
Printers of worsted tops	2
Scouring and carbonizing	2
Printers of cotton piece goods, rayons, nylons, silks and mixtures	29
Mercerizers of cotton piece goods, rayon piece goods and mixtures	16
Coated fabrics, oil cloths, etc.	6
Miscellaneous	7

We have tried to give a picture of the origin and history of the wet processing industry in the Rhode Island Section of A.A.T.C.C. and to show its stability in the face of competition and adversity. As in the other sections of New England, we may take pride in the stick-to-it-iveness and ingenuity of Yankee managements with the cooperation of the operatives trained by them. With reasonable conditions of competition from other parts of the country, we may look forward to a healthy industrial future.



Max Pollack & Company, Inc., Groton Plant, Groton, Connecticut

ACKNOWLEDGMENTS

We acknowledge with great appreciation the following sources of information:

"The New England Cotton Textile Industry," by J. Herbert Burgy, which furnished much of the data on cotton finishing.

Davison's "Textile Bluebook," which supplied information on statistics.

"American Wool Handbook," by Werner von Bergen and Herbert R. Mauersberger, which supplied historical data on wool processing plants.

CONVENTION QUESTIONNAIRE

The following information has been mailed to all AATCC members. Please cooperate with the National Convention Committee by filling out the questionnaire that was enclosed and returning, according to instructions, at the earliest possible moment.

FUTURE CONVENTIONS

AT the last meeting of the Council in Montreal it was voted that the National Convention Committee would run future conventions beginning in 1953. In order to make these annual meetings better and more attractive, this committee has been authorized to take a poll of all our members and therefore is submitting to you the enclosed questionnaire. As the expense of doing this is considerable, will you kindly make sure we get a full and complete return by filling it out NOW and mailing it back in the stamped and addressed envelope enclosed.

In order to clarify your ideas, the reasons for the questions asked are given below.

ATTENDANCE

One measure of the success of a convention is the attendance. In asking you this and the reasons for coming or not coming, we hope to make the meetings more attractive for those who do come and find out if we can, the reason why so many of you fail to attend.

LOCATION

Our conventions have grown so large that only the largest hotels can still accommodate us. Chattanooga, Tenn., and Augusta, Ga., once satisfactory, can no longer be considered. Washington, D. C., would be acceptable if we knew in advance when Congress would not be in session so hotel space would be available. Rooms in a hotel must now be engaged 3 years in advance in order to get them. The questions under this heading are really to find out if you prefer to rotate the meetings as in the past or whether you would like to settle on one city as permanent convention headquarters—probably Atlantic City. Such a choice would reduce our overhead and might result in cheaper rooms.

PROGRAM

Does the general pattern of our conventions suit you with its technical sessions, intersectional contest, Olney Medal award, at least two banquets and opportunities for golf, entertainment and social meetings—or would you prefer that more emphasis be put on any one of these.

The question of setting up free bars by certain companies in hotel bedrooms has proved embarassing at times and we would like your candid opinion on it. This has nothing to do with public hotel bars or cocktail parties before dinner. No change is even being considered on these.

SECTIONAL ACTIVITIES

Your local section officers are always interested in new members and younger members who want to work for their section. Kindly fill this out if you want to help them.

* * * *

Please do your part towards making our conventions successful by filling out the questionnaire promptly and mailing it back NOW to Kenneth H. Barnard in Bound Brook, New Jersey.

For the Convention Committee,

Kenneth H. Barnard, *Chairman*
George O. Linberg
Charles W. Dorn
Walter F. Fancourt, III
George H. Wood
Samuel L. Hayes

QUESTIONNAIRE

(Specimen)

A. Attendance

1. Did you attend the Augusta, Ga. Convention in 1948? Yes ( ) No ( )
2. Did you attend the Atlantic City Convention in 1949? Yes ( ) No ( )
3. Do you plan to go to Portsmouth, N. H. this fall? Yes ( ) No ( )

B. Reasons

If you failed to go to any of the above, was it because

1. Of the time and distance involved? Yes ( ) No ( )
2. The program lacked attractiveness? Yes ( ) No ( )
3. You personally pay your own Convention expenses? Yes ( ) No ( )
4. Your employer failed to appreciate the value of these meetings? Yes ( ) No ( )

C. Location

1. Would you prefer that the locale of the annual convention be rotated from Boston to New York to Atlantic City, with occasional visits to Chicago, or possibly Palm Beach or California? Yes ( ) No ( )
2. Would you rather that the Convention be confined to the first three cities mentioned under number 1? Yes ( ) No ( )
3. Should we settle on one centrally-located convention city, —probably Atlantic City? Yes ( ) No ( )

D. Program

1. In general, do you like the present program of the annual meeting? Yes ( ) No ( )
2. Is one banquet enough? Yes ( ) No ( )
3. Do you think the Convention Committee should try to discourage the leasing of suites to companies for use as private bars? Yes ( ) No ( )
4. The 1951 Convention in New York City is scheduled for Wednesday, Thursday and Friday. Do you prefer this to the usual Thursday, Friday and Saturday schedule? Yes ( ) No ( )

E. Information for your local section officers:

1. If you do not participate in your local section's activities, would you be interested in holding office? Yes ( ) No ( )
2. Can you cooperate on any of our research programs? If so in what subjects are you interested? Yes ( ) No ( )

Piedmont Section—

STRIPPING NYLON WITH TEXTONE (SODIUM CHLORITE)*

W. C. PEURIFOY, JR.
Hoover Hosiery Mills

The need for redyeing hosiery in the hosiery industry as it is presently conducted makes the stripping of color from nylon hosiery important to every hosiery dyer. A practical two-step procedure is described, in the first step of which sulfoxylate is employed, and in the second, sodium chlorite.

IN our hosiery industry it is becoming more and more evident that the job of the hosiery dyer seems to get a little more aggravating as we change from one season to another. Especially has this been true since the retailers have begun operating on as close an inventory as possible. It has now become the job of the mill to be prepared to make shipments covering its entire range on twenty-four-hour notice. I have known many cases when orders received in the morning mail would be shipped in the afternoon of the same day. These are not just special orders or "fill ins," but sizable orders that cover an entire range of styles, colors and sizes. And then, too, there are a great many instances when special shades are to be processed and placed in air express within the shortest possible elapsed time.

With these conditions in mind, we can readily see that there must be a certain amount of dyed hosiery in the stock bins at all times if we are to keep our customers satisfied with their delivery requirements. Of course, we let our dyed stock dwindle down as we approach the end of each season, but there is a limit to this practice if we are to keep our shipping time as short as possible. In those mills where there is a great assortment of styles and colors in proportioned lengths, there is naturally a great deal of redyeing to be done. And this redyeing must be carried out in a very short time in order to conserve the greige stock for future operations.

Before I discuss redyeing, however, please let it be understood from the outset that I am not here for the purpose of advertising any particular product or any particular company. My sole purpose is to present to you a little processing knowledge, which has been of great help to us in the past and which, although elementary to some of you, may be helpful to others. If I mention any particular products, it is because they are now being used successfully; possibly others might work just as well.

For uniform results in redyeing the dyer must choose his stripping agents with great care and must control his procedures at all times. It is too late when he is called out to the pairing tables (as we all have been at some time or another) to see his redye lot containing two or three versions of the same color all mixed together. We have all learned that a dye bottom of sufficient color reduction and of adequate clarity is not easily obtained when ordinary stripping procedures are used on nylon.

I shall therefore present to you a method that we have used for the last few years and that I would like to pass on to you at this time. After the hose have been treated with a transfer remover and given two good hot washes, they are ready to go directly into the stripping bath. The transfer remover removes not only the transfers but the finish as well. We bring a fresh bath up to 180° F. and add the following chemicals, calculated on the dry weight of the fiber:

5% of a good fatty alcohol or amine condensate,
2% acetic acid, 56%, and
6% sulfoxylate

The goods are run in this bath for 15 minutes, and the liquor is dropped. Two hot 5-minute washes follow.

At this point the colors will be reduced to various shades of yellow and yellowish greens, as the sulfoxylate is more effective on the reds than on the blues and yellows. As you can see, however, from these illustrative samples, we do not yet have a desirable base for redyeing.

In the next step of our stripping procedure we make use of the color-destroying properties of sodium chlorite. A new bath is prepared in the dye tub at 180° F., to which are added the following chemicals, again o.w.f.:

5% of a good fatty alcohol or amine condensate,
2% acetic acid, 56%, and
4% Textone

This bath is also run for 15 minutes and dropped. After two hot washes at 140° F. for 5 minutes each, the hose should be ready for redyeing in the usual way. If examination discloses that the colors are not sufficiently destroyed, they can be cleared up considerably by being run an additional 5 to 8 minutes as shown by these samples.

In this last bath, we find that the decomposition of sodium chlorite in acetic acid solution produces both chlorine dioxide and sodium acetate as illustrated by the equation that follows:

$$5NaClO_2 + 4CH_3COOH \rightarrow 4ClO_2 + 4CH_3COONa + NaCl + 2H_2O$$

The chlorine dioxide is the compound that furnishes the oxidizing power. The rate of the decomposition is greatly influenced by conditions, especially pH and temperature. A pH of around 3 to 5 and a temperature of 180° F. seem to be the most effective.

If the evolution of chlorine dioxide proves to be a problem in the dyehouse, this condition may be helped by the addition of about 1 per cent of tetrasodium pyrophosphate and ½ per cent of 130-vol. hydrogen peroxide to the oxidizing bath, which repress chlorine dioxide according to the following equation:

$$2ClO_2 + H_2O_2 \rightarrow 2HClO_2 + O_2$$

* Presented before Piedmont Section in Winston-Salem, N. C., on April 1, 1950.

Report of the Nominating Committee

THE Councilors representing Sections, in their capacity as Nominating Committee, have instructed the Secretary to report nominations for officers in 1951 as follows:

For President: C. Norris Rabold.

For Vice Presidents, two to be elected: Arthur W. Etchells, George O. Linberg.

If additional nominations for either office, signed by at least twenty-five senior members, be filed with the Secretary not later than October eighth, they will be listed on the ballot in accordance with the Constitution, in equal standing with those reported by the Committee.

Respectfully submitted,

H. C. CHAPIN, *Secretary.*

Second Annual Outing, Hudson-Mohawk Section

THE second annual outing of the Hudson-Mohawk Section was held on Friday, June 23rd 1950 at the Shaker Ridge Country Club, Albany, New York. 106 members and guests took an active part in the affair. General Chairman for the outing was Irwin J. Smith.

The program consisted of the following events under the guidance of the committee chairman:

Golf—Harvey Gendreau, Sandoz Chemical Co., Jack Epelberg, Cluett Peabody & Co., Del Truman, Triangle Finishing Corp., and Warren Broadbent, Geigy Co.

Darts—Walter Drautz, General Aniline & Film Co.

Cards—Malcolm Coulman, Onyx Chemical Co. and Ernie Allard, Cluett Peabody Co.

Entertainment—William M. Kline, Ritter Chemical Co., Inc.

Dining—John Merrill, Cluett Peabody Co.

Swimming—E. Eddington, Cluett Peabody Co.

Softball—Victor J. Christopher, Mohawk Carpet Mills, Inc.

In addition, community singing was led by the following groups:

Cluett Peabody & Co, Dyestuff Salesman.

Mohawk Carpet Mills, Inc., Chemical Salesman.

Triangle Finishing Mills, Wool Dyers.

Ritter Chemical Co., Inc., Knit Good Dyers.

The above unscheduled performances won no prizes but a good time was enjoyed by all.

Bob Peters won a set of golf clubs with Ernie Allard winner of a special prize for the newest married man.

An active interest was shown in the dart contest with the following winners:

Game 201—*1st*—Austin, *2nd*—Lang.

Game 45—*1st*—Ross, *2nd*—Lampert.

Baseball—*1st*—Tryanna, *2nd*—Christopher.

Consolation prize—Halhweg.

The horseshoe pitching contests were won by A. Bessett and Charles Kenyon.

Swimming prizes were awarded the following teams:

Nudley Relay—1st—Neil Houston, Manny Rosenblum, David Schofield, George Wayland.

2nd—John Merrill, E. Eddington, Jack Epelberg, Ernie Allard.

Free Style Race—1st—Larry Miller, 2nd—Jack Epelberg, 3rd—Don Merrill. Consolation prizes went to Ernie Allard and Manny Rosenblum. The under water distance swim was won by Neil Houston.

The following won the various golf prizes:

Low gross, F. Murphy; *2nd Low gross,* Don Reisigl; *3rd Low gross,* Del Truman; *1st Kickers,* E. Eddington; *2nd Kickers,* R. Quiri; *3rd Kickers,* R. Finger; *4th Kickers,* J. Merrill; *5th Kickers,* T. Visocki; *6th Kickers,* J. Stanley and *High Score,* A. Van Wert.

Closest to pin on 5th:

1st, J. Cudahy; *2nd,* R. W. Ritter, Jr.; *3rd,* Ed. Lynch and *4th,* S. Wade.

Longest drive:

1st, H. Aylware; *2nd,* C. Allen and *3rd,* J. W. Norton.

Horseshoes and cards were enjoyed by many. Entertainment was provided during the dinner and the social period lasted well into the evening. William M. Kline acted as master of ceremonies and introduced the committee chairman and officers of the section who spoke briefly.

WILLIAM A. NELSON, *Secretary*

—♦ ♦—

Correction

Re: American Dyestuff Reporter Award

IN the article on the "American Dyestuff Reporter Award" which appeared on page P529 of the August 7th issue, it referred to the 30th Annual AATCC Convention to be held October 17-18-19, 1950, at the Hotel Statler, New York. This should have read "1951" as this year's convention is being held in Portsmouth, New Hampshire, on September 28-29-30.

EMPLOYMENT REGISTER

This column is open for two insertions per year, per member, without charge. Blanks can be obtained from, and filed with, the Secretary of the Association, Lowell Textile Institute, Lowell, Mass. It is understood that these will be open to inspection by prospective employers, who can obtain further information from the Secretary.

50-24

Education: S.M. Chem. Engg.; Ph.D., Chemistry.

Experience: Chemical research and laboratory direction, textiles and rubber.

Age 36; married; references; vicinity of New York City preferred but not essential.

8-21, 9-4

CALENDAR

COUNCIL

Meetings: Sept. 28-30 (Portsmouth, N. H. Convention) Nov. 17 (New York).

NATIONAL CONVENTIONS

1950: September 28 to 30. Portsmouth, N. H.
1951: October 17-18-19, Statler, New York.
1952: Boston.

HUDSON-MOHAWK SECTION

Meetings: Sept. 15 (Albany), Oct. 20 (Utica), Dec. 8 (Albany), Jan. 19, 1951 (Albany), Mar. 16, 1951 (Albany), May 11, 1951 (Albany), June 22, 1951 (Annual Outing).

MID-WEST SECTION

Meetings: October 28, 1950, February 3, 1951 (Morrison Hotel, Chicago), May 5, 1951 (Hotel Schroeder, Milwaukee), June 16, 1951 (Outing, Lake Lawn Lodge, Delavan, Wis.).

NEW YORK SECTION

Meetings: October 13 (Swiss Chalet, Rochelle Park, N. J.), November 17 (Swiss Chalet), Jan. 12, 1951 (Hotel New Yorker), Feb. 23, 1951 (Hotel New Yorker), March 30, 1951 (Swiss Chalet), May 4, 1951 (Swiss Chalet), June 15, 1951 (Outing).

PHILADELPHIA SECTION

Meetings: October 28 (Meeting-in-Miniature, Philadelphia Textile Institute), December 8, January 19, 1951.

PIEDMONT SECTION

Meeting: October 28 (Charlotte, N. C.)

RESEARCH COMMITTEE

Meetings: Sept. (Portsmouth, N. H., Convention), Nov. 17 (New York).

RHODE ISLAND SECTION

Meetings: October 27 (Providence Engineering Society Hall), November 17 (Johnson's Commodore Room).

SOUTH CENTRAL SECTION

Meeting: Nov. 4 (Hotel Patten, Chattanooga, Tenn.).

SOUTHEASTERN SECTION

Meetings: September 23 (LaGrange, Ga.), December 9 (Atlanta, Ga.).

STUDIES IN TEXTILE PRINTING:

I. EVALUATION METHODS AND TERMINOLOGY

F. FORDEMWALT and C. R. WITSCHONKE

Contribution of the Application Research Department, Calco Chemical Division, American Cyanamid Company

A new method for evaluating results in textile printing has been developed. This involves the calculation of three values, the "Percent Fixation", the "Color Efficiency" and the "Printing Efficiency", respectively. These values are found by simple calculation from three measurements: (1) the color value of the print; (2) the amount of dye applied to the fabric in the printing operation; and (3) the amount of dye fixed in the fabric and remaining there after the final soaping operation. Illustrative examples show that a print which appears weak may actually give the printer more for his money and that such a situation is clearly disclosed by the analytical evaluation method.

INTRODUCTION

IN spite of the rapid advances which have been made in the general field of science during the past half century, the serious application of scientific study to the problems of textile coloring has been a relatively recent development. As a result of the fundamental studies of Boulton, Morton, Royer, Vickerstaff, Lemon, Valko and many others, our understanding of the physical and chemical processes involved in the dyeing of textiles has been greatly advanced. Since the printing of textiles is concerned with the application of dyes to fibers it, too, has benefited from these fundamental studies. In printing, however, a great many added variables are encountered. In the case of vat printing, for example, the rheological properties of the printing color pastes, the diffusion rates of the dye leucos, the rates of moisture sorption by the dried color films, the control of conditions inside the agers and many other factors not encountered in the dye bath are of the greatest importance in determining the final outcome of the printing process. An additional differentiating factor resides in the fact that an unsatisfactory print cannot be reprinted, whereas a dyed fabric can usually be redyed. Therefore, it can be seen that the study of textile printing is complicated.

Some time ago a fundamental study of some of the factors involved in the printing of vat and soluble leuco ester vat dyes was initiated at Calco. As in any scientific investigation, the need arose for methods of evaluation which would be at least as accurate as the printing methods to be studied. In addition, it became apparent that it was desirable to have a uniformly applicable terminology with which to describe quantitatively the effects being measured.

Part I of this series of papers on textile printing studies presents an applicable terminology. Part II will describe the methods of analyses which were developed for vat prints. Part III will present additional results obtained by applying these methods of evaluation to the printing process.

In the application of dyes to textiles by the printing process, there is a constant demand that choices be made (1) from the available dye pastes or powders, (2) from the various printing pastes or carriers which are available, and (3) from the different application processes. Generally speaking, there has been no method for making the necessary comparisons other than that of making strike-offs and comparing the finished prints for quality and color value. Such a practical comparative run must be made before final judgment is passed in any case and may be adequate for many mill situations. It has long been recognized in research studies on textile printing, however, that many important questions still remain unanswered after these tests have been made. This realization was clearly acknowledged by Chambers (*1*) when, in an excellent review of the field of vat printing, he stated: "A rapid method of analysis to serve as a check on printing efficiency would be of great value to printers and may possibly be worked out in the future."

It is generally recognized that two vat printing color pastes may be deposited differently from the same engraving. Also, in cases where equal amounts of dye are applied at the machine, entirely different amounts may be fixed and remain in the fabric after the final printing operation. In cases where the amounts of dye fixed in the fabric are equal, the color values of the prints may vary rather widely. For these reasons the color value alone may not provide a reliable evaluation of a dye formulation, or of a carrier, or of an application process. More detailed information is required. Quantitative methods for measuring the amount of dye in both finished and unfinished prints of a selected group of the vat and soluble-vat dyes have been developed and are in regular use at Calco. In view of this work, it is believed that a greatly improved approach to research in the field of textile printing has been made possible.

REQUIRED MEASUREMENTS

In order to obtain quantitative expressions to clarify the part played by the various steps in printing, only three precise measurements are required. These are: (a) the color value of the print, (b) the amount of dye deposited by the printing machine and (c) the amount of dye retained in the fabric at the end of the operation. These are defined further as follows:

(a) Color value (expressed relative to the standard print for the series for which the strength is set at 100%). Each print is measured for its reflectance color value. This may be done visually, although to eliminate the human error all reflectance values should be measured photometrically. For any given series of measurements one print, generally representing a particular procedure or a particular formulation, is arbitrarily chosen as the standard for the series. It is assigned a color

value of 100% and this is the reference standard upon which the color values of all other prints in the series are expressed. That is, a color value of 110% simply means the print so described is 10% stronger than the standard. It would be possible to set up permanent reflectance standards on colors for which analytical procedures have been established. Until this has been done, however, all evaluations must remain on a comparative basis.

(b) Milligrams of dye in each 100 sq. cm. of the printed portion of the fabric immediately after being printed. This value states exactly how much dye was applied to the fabric during the printing operation.

(c) Milligrams of dye in each 100 sq. cm. of the aged and soaped print. This value states exactly how much dye was retained in the fabric after all the application treatments. In this paper the drying after soaping is taken as the final operation.

Obviously (b)—(c) represents the amount of dye lost from each 100 sq. cm. of the cloth between the time it was printed and the time it was completed, that is, the loss in washing and processing.

TERMINOLOGY

From these measurements it is possible to compare printing processes and printing formulations much more significantly than has been possible heretofore. In order to express these comparisons the following terminology has been adopted and is submitted to those interested in textile coloring for their consideration. In explaining the terminology, the three measured values, designated by the letters (a), (b) and (c), respectively, have the meanings stated above.

I. Percent Fixation, Designated PF

$$PF = 100 \times \frac{c}{b} \quad \left(\text{that is, } 100 \times \frac{\text{dye content of finished print}}{\text{dye content of initial print}}\right)$$

This is a definite numerical quantity that expresses the percentage of the applied dye which becomes fixed in the fabric during the application operations. If PF = 75% it is known that three-fourths of the dye originally deposited on the cloth during the printing process remained fixed in the fabric during the subsequent operations. In other words, one-fourth the dye was lost.

II. Color Efficiency, Designated CE

Color efficiency is a relative term that can be expressed only in terms of a reference standard. In this respect, it corresponds to such a physical measurement as specific gravity. A statement that the specific gravity of a material is "n" has no meaning until the reference standard is stated, i.e., H_2O for liquids or air for gases. Correspondingly, the reference standard for the color efficiencies for all members of a series of prints is the standard print of the series. When the value of the ratio a/c (color value/amount of dye fixed) is calculated for any print, the numerical value of this ratio depends upon the effectiveness of the dye, present in the finished print, in coloring the fabric. If the coloring of textiles involved no other problem than that of fixing the dye in the fabric, all prints would have the same a/c ratios. That is to say, each milligram of dye would always produce the same amount of coloring. The color value of a print seems to depend, however, not only upon the total amount of dye present but on other factors such as the position of the dye within the cloth, the distribution of the dye within the fibers, etc. As a result, it is well-known that two prints may contain the same amount of dye but still have entirely different color values. The numerical value of the ratio of a/c for any print is independent of how much dye is present but depends only on how effective the fixed dye is in coloring the fabric. Therefore, if the a/c ratio for a given print is 1.2 times as great as the a/c ratio for the standard print, each milligram of dye in the test print is 1.2 times as effective as that in the standard print.

Since efficiencies are more readily expressed on a percentage basis, the numerical value for color efficiency is found by the expression:

$$CE = 100 \times \frac{\text{a/c of the test print}}{\text{a/c of the standard print}}$$

Stated in words,

$$\text{Color Efficiency} = 100 \left(\frac{\text{Color value of the test print/fixed dye in test print}}{\text{Color value of the standard print/fixed dye in std. print}}\right)$$

Thus, the color efficiency for the standard print becomes 100% and that for a print in which the color is 1.2 times as effective as in the standard becomes 120%.

III. Printing Efficiency, Designated PE

The printing efficiency, like the color efficiency, is a relative term. The standard of reference is again the standard print of the series. The printing efficiency describes the over-all effectiveness of the whole printing operation and affords a measure of the relative money value of the process or formulation being tested. For the measurement of the economics of a printing process, the amount of dye used at the machine to produce a desired depth of final color is the significant value. When a/b (color value/amount of dye deposited) is calculated for any print, the numerical value of this ratio depends upon how much final reflectance color was obtained per unit weight of dye applied to the fabric at the printing machine. Its value involves all the factors encountered in printing. It provides a quantitative measure of how much print color value is obtained per unit weight of dye used at the machine. If the a/b ratio for a print is two times as great as the a/b ratio of the standard print, it is known that each milligram of dye consumed at the machine produced twice as much final print color. Stated another way, only one-half as much dye would be used up in producing a print of equal color value. This means that the money value would be twice as great. The numerical value

TABLE I

	Mg. of Dye Present in Each 100 cm.² of Print		*Color Value*	*Per cent Fixation*	*Color Efficiency*	*Printing Efficiency*
	After Printing	*After Soaping*	*CV*	*PF*	*CE*	*PE*
	(b)	(c)	(a)			
Standard Print of the series....	10.1	7.9	100%*	78%	100%*	100%*
Experimental Print No. 1.....	8.65	5.1	81%	59%	126%	95%
Experimental Print No. 2.....	12.0	7.9	104%	66%	105%	88%
Experimental Print No. 3.....	10.1	8.15	63%	80%	61%	63%

* These values of 100% were arbitrarily assigned to this print because it was used as the standard of comparison for the series.

for printing efficiency is found by the expression:

$$PE = 100 \times \frac{\text{a/b of the test print}}{\text{a/b of the standard print}}$$

Stated in words,

$$\text{Printing Efficiency} = 100 \left(\frac{\text{Color value of the test print/dye applied to the test print}}{\text{Color value of the std. print/dye applied to the std. print}} \right)$$

The printing efficiency of the standard is, of course, 100%. The print which required only one-half as much dye to produce the same color value has a printing efficiency of 200%.

EXAMPLES

Table I illustrates the application of this terminology in an actual comparative evaluation of three experimental vat carriers. The standard in this case was a vat carrier regularly used in the laboratory and each printing color paste contained the same weight concentration of real dye.

From these results, it can be seen that:

In Print No. 1 the color value was 19% weaker than that of the standard, the PF was 19% less, but the CE was 26% greater. As a consequence of the high color efficiency, in spite of the fact that 41% of the dye applied became lost in the operation, the over-all result, i.e., the printing efficiency or the amount of final color per unit weight of dye used was 95%, only 5% below that of the standard.

In Print No. 2, the CV was 104% showing that this print was slightly stronger than the standard. The CE value was 105%. This shows that the dye that became fixed in the fabric was 5% more effective in producing color value. Since 34% of the dye which was used at the machine was lost, however, as compared with only a 22% loss in the standard, the printing efficiency was low, being only 88% of the standard.

In Print No. 3, the percent of the applied dye which became fixed was slightly higher than in the standard. As shown by the CE value of only 61% the dye was relatively ineffective in producing color and as a result, the color value and the printing efficiency were both low.

From the foregoing examples it can be seen that the "Percent Fixation", the "Color Efficiency" and the "Printing Efficiency", when considered together, provide a more complete picture of what is happening to the dye in the printing operation. A more logical approach to the problem of improving the process is thus made possible.

SUMMARY

A uniform terminology for use in evaluating vat prints has been proposed and illustrated. The three terms which have been presented are:

1) "Percent Fixation", which tells what percent of the applied dye becomes permanently fixed.
2) "Color Efficiency", which expresses the relative effectiveness of the fixed dye in coloring the fabric.
3) "Printing Efficiency", which is a measure of the relative over-all economics of the printing process.

This terminology should be generally applicable in evaluating prints of other class of colors such as directs, azoics, pigments, etc., where suitable analytical procedures are available.

REFERENCE

(1) Chambers, I. F., "Vat Color Printing," *Am. Dyestuff Reptr.* 25, page 289 (1936).

ABSTRACTS

Vicara: a Progress Report on This New Blending Fiber

J. H. Karrh, *Rayon & Synthetic Textiles* 31, 36-7, July, 1950.

Now that Vicara textile fiber is being extensively used commercially, it is daily demonstrating its ability to lend a helping hand to the other fibers in the blend. In a comparatively short period of time, Vicara has won unique distinction as "the fiber that improves the blend" in the manufacture of upholstery fabrics, hosiery knit goods, women's dress goods and suitings, men's suitings, sport clothes, novelty fabrics and blankets.

Vicara imparts a cashmere-like hand, adds suppleness and draping qualities to rayon, warmth and absorptiveness to nylon and softness to wool. When it is blended with cotton, there is a definite up-grading of the fabric in such properties as a more lively hand, a richer appearance and a decided increase in wear comfort.

Vicara has excellent resistance to acids and alkalies. The fiber is inherently moth resistant and is highly mildew resistant. The warmth properties are good; in comparable Vicara and wool samples, Vicara was shown to be as warm as wool.

The fiber has an affinity for most types of dyes—acid, chrome direct, basic, vat, developed, naphthol and acetate. As is the case with any other fiber, selective dyestuffs must be used to best suit the end use of the particular fabric being dyed. In most cases the wool colors—acid, chrome and milling colors—can be easily applied to the fibers. Dyeing can be carried out in staple form, top, yarn or fabrics.

Vicara is readily launderable. Either alone, or in blends with other washable fibers, it can be washed by normal methods.—W. H. C.

Commercial Output of Dynel Begins

E. Stowell, A. L. Snyder and R. W. Gaines, *Rayon & Synthetic Textiles* 31, 35-6, July, 1950.

The first half of 1950 has been a period of progress for Dynel, Carbide's new acrylonitrile-vinyl chloride staple fiber. This fiber has many desirable characteristics. Dynel fabrics are warm without being scratchy or irritating. They are shrinkproof and nonfelting. In addition they are not attacked by moths or mildew and are extremely strong, abrasion-resistant, durable and fire-resistant. They also have excellent resistance to chemical action; dynel fabrics can be disinfected by a simple rinse in concentrated hypochlorite solution, without change in color or tensile properties.

The hand of the finished goods can be controlled from that of a soft zephyr type to that of a coarse wool by proper blending of different deniers during yarn manufacture.

Standard equipment is used for dyeing Dynel. Techniques for applying acid-type dyes have been adapted to large-scale application. The light stability of certain acetate colors has been improved. Test dyeings with vat colors indicate that these colors are suitable for Dynel and give colors with excellent fastness to light.

The colors resulting from acid-type dyes using certain commercially practical procedures have good fastness to light, washing, crocking, and cross-dye-

ing. No dyeing assistants are required to get pastel shades. Certain copper salts, in combination with suitable reducing agents, are used as assistants when heavy shades are desired. They combine with both the Dynel and the dyestuffs to give the necessary affinity.

Dynel is recommended for work clothing, laundry nets, filter cloths, draperies, upholstery, and blankets, and in the form of knit goods is expected to find use in half-hose, sweaters, bathing suits, etc.—W. H. C.

Gloss Measurements on Fabrics

R. G. Quynn, E. J. Bernet, and E. R. Fischer, *Textile Research J.* 20, 492-509, July, 1950.

The gloss or luster of a surface is essentially a subjectively evaluated property which is related to the manner in which the surface reflects light falling on it. Although the impression or sensation of glossiness is a matter of common experience, measurements of this property in physical terms and correlation of the measurements with its psychological aspects are extremely difficult. The most satisfactory physical measurement involves the use of a goniophotometer, an instrument which measures the amount of light reflected from a surface at various angles. Curves showing intensity of reflected light *vs.* the scanning angle exhibit a peak at the so-called specular angle for surfaces rated as being of high gloss. Surfaces of more complex structure, such as those of fabrics, show a displacement of maximum reflectance from the specular angle; the displacement is related to the angle of the incident light. The curve shape is characteristic for different fabrics.

This article describes the experimental measurement of reflectance by means of a goniophotometer for a group of 17 fabrics of various constructions and two samples of photographic paper. The results are presented in the form of curves, computed "gloss indexes" or "gloss numbers," and visual ratings by different observers.—W. H. C.

The Harris Color Stripping Process

M. D. Ewing, *Textile Inds.* 114, No. 6, 99-100, June, 1950.

Essentially the Harris process protects wool fibers by the chemical replacement of the extremely vulnerable disulfide link by a virtually completely stable substitute linkage. Once this has been done the material may be subjected to rigorous stripping action without further damage.

The rebonding is achieved through the use of ethylene dibromide in an alkaline solution. Thus a mild strip takes place in the course of this protective step. Having protected the fibers, it is then possible to follow with any one of several different modifications to achieve best results with different types of dyes.

Certain factors tend to influence this treatment, namely the dyestuffs contained in the material to be treated and the extractable oil content which should be at 2% or less. Generally speaking, however, the treatment is quite uniform, producing closely similar degrees of whiteness on similar stocks.

In comparing materials Harristripped and those treated by other commercial stripping methods, the Harristrip product is firm, strong and resilient, as opposed to harsh brittleness obtained in conventional stripping.

It has been determined both in the laboratory and through considerable manufacturing experience that Harristrip stock has the same affinity for dyestuffs as untreated wools.

Certain limitations exist and should be noted. Although it is possible to achieve greater whiteness in many cases through its use, Harristrip cannot remove many dyestuffs which are generally considered unstrippable; chrome black is an example of this problem. There are also problems in handling vat dyes which are yet to be solved.— W. H. C.

Textile Process Water Problems and Control

E. T. Laurin, *Rayon and Synthetic Textiles* 31, No. 5, 103-5; No. 6, 81-2; No. 7, 81-3, 1950.

Natural occurring water supplies usually require some treatment before they are satisfactory for use in processing textiles. Treatments to improve water supplies are (1) softening, to control or remove the "hardness" in water, (2) aeration to remove carbon dioxide and oxidize iron and manganese, (3) coagulation to agglomerate suspended particles and hasten settling, (4) filtration to remove suspended matter, and (5) control of the corrosive action of water.

The impurities in water of greatest concern to the textile operator can be listed as follows:

1. Salts of calcium, magnesium, iron and manganese.
2. The gases, oxygen and carbon dioxide.
3. Organic and suspended matter.

There are several good treatments to soften water for textile use.

1. The lime-soda method of softening consists of treatment of the water with lime and soda ash in a basin until the reaction of these chemicals and the hardness salts in the water is complete and precipitates have settled out. This method of softening not only removes the greater part of the calcium, magnesium and iron but will also remove suspended matter and carbon dioxide.

2. The base-exchange method of softening requires the flow of water through a bed of zeolite mineral, or base-exchange resin. The sodium from the zeolite or resin is exchanged with the calcium and magnesium in the water. By this method of softening, water can be softened almost to zero hardness. The application of the zeolite method is described at considerable length.

3. Calgon is a sodium phosphate glass of the ratio $Na_2O:P_2O_5$ of 1.1:1. It has properties of sequestering such metals as calcium, magnesium, iron, manganese and others in solution. When Calgon is added to any textile process water in amount sufficient to tie up the calcium and magnesium, soaps, oils, dyes and finishing materials used in process are not precipitated. The author shows how Calgon may be used to solve various water problems in the woolen mills, cotton and rayon finishing plants, and hosiery mills. He concludes with a method for testing the hardness of water.—W. H. C.

Auxiliaries in the Service of Textiles. The Chemical Industry's Aids to Advance

Anon, Fibres II, No. 6, 213-19; No. 7, 247-9, 1950.

Prior to 1930, soap was the most important textile auxiliary, possessing not only detergent but also wetting and emulsifying powers. The great defect of soap was the formation of insoluble calcium and magnesium compounds when used in hard water. The sulfonated oils (olive and castor), particularly Monopol Oil, proved to be somewhat better in this respect, but had the defect of becoming rancid in prolonged storage when used as softeners.

The introduction of Igepon, about 20 years ago, gave the industry for the first time a soap-like product having wetting, detergent, dispersing and softening properties, which could be used in the wet processing of textile materials under acid and alkaline conditions alike and even in hard water.

Since 1930, numerous other "soap substitutes" have come on the market. In many instances these auxiliaries have been taken into use for simplifying existing textile treatments, while in others they have found favor because they are able to produce new effects. In some cases

entirely new methods of processing have had to be devised to make full use of the new textile auxiliary.

The author explains the chemistry of some of the most important types, and classifies them as follows:

1. *Anion-active.*
   Soaps.
   Sulfonated oil such as Turkey Red Oil and Monopol Soap and Calsolene Oil HS.
   Alkyl sulfates such as Gardinol and sulfated monoglycerides of fatty acids such as Arctic Syntex M and L.
   Alkyl esters and amides such as Aerosol OT and Igepon A and T.
   Alkyl sulfonates such as the Mersolates.
   Alkylaryl sulfonates such as Nacconol and Santomerse No. 1.
   Alkyl naphthalene sulfonates such as Aerosol OS.
2. *Cation-active.*
   Quaternary ammonium compounds such as Fixanol C and Lissolamines A and V.
3. *Nonionic.*
   Polyethylene compounds such as the Igepals, Peregal, Leonil and Lissapol N.

The author then discusses water- and shower-proofing auxiliaries; cationic softeners; after-treatments for direct dyes; the use of resins for crease-resistance; compounds to reduce gas fading; and insecticides and fungicides.—W. H. C.

The Influence of Sodium Carboxymethyl Cellulose on the Suspending Power of Built Soap Solutions

C. H. Bayley and A. S. Weatherburn, *Textile Research J.* 20, 510-13, July, 1950.

The influence of carboxymethyl cellulose (CMC) on the ability of soap solutions to prevent the deposition of carbon black on fabric during the detergent process has been studied. It was found that the presence of alkaline builders (sodium carbonate, modified soda, sodium metasilicate, and sodium orthosilicate) resulted in a decrease in the suspending power of soap solutions. The addition of CMC to such built soap solutions compensated to a considerable extent for the reduction in suspending power caused by the builder, although in no case did the suspending power equal that of the unbuilt soap. The maximum improvement in suspending power was obtained with a CMC concentration of 0.005%; *i.e.*, 5% of the weight of soap used. In general, those builders which caused the greatest depression in the suspending power of the soap solution also showed the greatest improvement in suspending power on the addition of CMC.—W. H. C.

Recent Developments in Non-shrink Processes for Wool

P. Alexander, *J. Soc. Dyers & Colourists* 66, 349-55, July, 1950.

The unique surface property of wool, the differential frictional effect (D.F.E.), by which the friction in the root-to-tip direction is less than in the tip-to-root direction, resides in the scale structure, and when this is removed the wool loses its tendency to felt.

All commercially practicable anti-shrink processes function according to two mechanisms—

(1) Removing or decreasing the D.F.E. by raising the with-scale coefficients or lowering the anti-scale coefficients, and thus removing the fundamental cause of felting; this can be achieved by wholesale removal of scales, by partial degradation of the surface, or by masking the scales with polymers.

(2) Gluing together the fibers within a yarn and thus preventing fiber movement. Most resin processes function by this technique, and the binding occurs locally and is well described by the term "spot welding".

Speakman and his co-workers found that treatment of wool with anhydrocarboxyglycine in an organic solvent, under conditions where the latter can polymerize to form polyglycine, leads to almost complete unshrinkability with a resin deposit of 4% on the weight of the wool. This process gives very good results, especially if the wool is uniformly adjusted to a slightly alkaline pH.

Several firms have brought out non-shrink processes based on melamine-formaldehyde resins. Their behavior is, in many ways, similar to urea-formaldehyde resins, and the usual procedure is to pad unpolymerized methylolmelamine, a condensate of melamine and formaldehyde, on to the wool and to condense it to an insoluble resin by baking about 110°C. in the presence of an acid catalyst. This resin treatment works almost entirely by the "spot welding" principle, the tensile strength of the yarn being greatly increased and the D.E.F. remaining unaffected.

Although good unshrinkability can be obtained, the melamine process had not received wide acceptance because the handle was harsh and there was no suitable baking equipment available for wool finishing. The process has now been modified by partly precondensing the resin and applying it as a colloid which becomes fully cross-linked at temperatures below 100°C., which can be attained during ordinary drying. Furthermore, by first modifying the surface of the wool with hydrogen peroxide, unshrinkability can be obtained with a very much smaller quantity of resin, and this results in a better handle. This new process has been shown to function by both scale masking due to a uniform film over the fiber and by "spot welding".

Silicones are the only resins which prevent felting by scale masking only, without forming any fiber-fiber bonds. Unshrinkability is obtained with 3-5% of resin if applied under conditions where it can chemically combine with the wool. It is possible to obtain the same polymer from different monomers of varying reactivities, but only those capable of reacting chemically with the wool gave a deposit which was wash-fast and produced unshrinkability.

Any reagent which removes the scales, or so loosens them that they come off during milling, renders wool completely unshrinkable. Many of the common reagents used fall into this class, such as chlorine at pH below 8.5, chlorosulfamic acid, sulfuryl chloride, and ozone. These processes, unless very carefully controlled, will result in loss of wool substance and give a product of poor wearing properties, since much of the resistance to abrasion of a wool is also impaired, and sometimes a harsh and at other times a slimy feel is produced.

Another group of reagents, such as permanganate at pH below 2, hypochlorite at pH above 8.5 (the changeover in mechanism occurs within half a pH unit), fluorine, chlorourea at pH below 2, alkali dissolved in an organic solvent, and a mixture of hypochlorite and permanganate at pH 8.5-10, leave the scales apparently unchanged and yet produce unshrinkable wool. With the exception of the last two processes, however, all these reagents give partial unshrinkability only.

The article, which should be read by everyone interested in wool shrinkage, is illustrated by photomicrographs and has 42 references to the literature.—W.H.C.

Organdie Finishes: Their Importance

R. G. Manudhane, *Indian Textile J.* 60, 631-5, May. 1950.

Before resins and other durable and semidurable finishes came into the market, there were mainly two permantnt finishes known to textile finishers: mercerizing and parchmentizing. In the original patent of Mercer he mentioned three swelling agents for cotton: caustic soda, sulfuric acid, and zinc chloride, at 60°., 105°., and 145° Tw., respectively. It is sulfuric acid which is mainly used for parchmentizing purposes, but other agents like zinc chloride, nitric acid, or phosphoric acid can also be used.

In mercerizing, a change in the concentration or temperature of the caustic

soda will result in better or poorer mercerizing effects, but the change will not give altogether different results. Parchmentizing is very different in this respect. Any attempt to pass the critical range will result in a new finish. Thus, sulfuric acid at 109° Tw. has no action; at 110° it produces a soft wool-like effect; at 114°, a stiff finish with considerable shrinkage; and at 118°, a stiff and transparent finish (all based on a treatment of seven seconds at room temperature).

The type of goods to be parchmentized will depend on the finish desired. In general, for the stiff transparent organdie finish light-weight goods of fine construction are used, and for the soft wool-like effects, medium weight fabrics are preferred. The cloth should be well singed, bleached and mercerized, and should be free from all foreign matter. As pointed out by Heberlein, mercerized goods are much more reactive to parchmentizing than unmercerized.

The author remarks that the secret of success in this process is rigid control of the concentration of the acid. He gives full details for producing an organdie finish, and also describes experiments with the addition of formaldehyde to the acid, to stabilize and prolong the reaction. Various patent references are cited.—W.H.C.

Control Instruments in the Processing of Textiles

L. Walter, *Textile Mercury & Argus* 122, 1047-55; 123, 17-19, 28, 57-65, June 30, July 7 and 14, 1950.

Automatic control instruments are becoming increasingly popular in the manufacture of textile goods. Consider some of the advantages they offer—saving of labor, reduction of spoilage of goods, better quality and uniformity, and savings of heat and fuel, of water and other materials during processing. These are benefits no progressive management can afford to overlook.

There is only one thing which could delay the wider use of controllers, and that is wrong appreciation of what a controller can do and of what is beyond its scope. The purpose of this treatise on automatic control instruments is to give some information about the factors which influence choice of a control instrument in the mill. The more fundamental knowledge the textile engineer has regarding exigencies of control, the better will he be able to co-operate with the control expert in determining the right method of control for the job in hand.

The author deals first with the various process factors in a textile plant which may require controls. These include heat (for drying, heating dye liquors, etc.), pressure (particularly steam pressure), moisture content (of the air or the textile), liquor level and rate of flow, and the speed of machines. The characteristics of a heat flow process are described at some length. The mechanisms and functions of various automatic control instruments are described, with diagrams. A long bibliography concludes the article.—W.H.C.

Screen Printing Technique. Coating of Screens

F. W. Mackenzie, *Dyer & Textile Printer* 103, 803-5, June 30, 1950.

The preparation of a screen for printing purposes involves coating with light-sensitive substances, usually in the form of a gelatine emulsion, to which is added potassium or ammonium bichromate. Opinions differ widely on the merits of the various colloids available and the methods of applying the coating and drying.

In spite of its obvious limitations, brush coating of bichromated colloids is deservedly popular, especially where the process is practiced on a small scale, because it has the merit of requiring only the simplest apparatus. Where a large number of screens have to be coated other methods are finding favor.

Directions are given for applying the coating to the screen, and for drying.

The author discusses brush coating, roller coating, squeegee or "doctor blade" coating, "weir coating" and "whirler coating". Some of these types are illustrated. He cautions that the coating room should be screened from direct daylight.—W.H.C.

"Fall-ons" and Half-tones in Textile Printing

J. H. Downey, *Textile Age* 14, 36-43, July, 1950.

This is a technical discussion of certain aspects of the production of "fall-on" and half-tone effects in printing by the engraved copper roller and silk-screen methods. Half-tone means the production of part of a pattern several shades lighter than the main pattern, or in other words, dark and light tones of the same color in one printing operation. The term "fall-on" is used where one color is printed on top of another to give a different color effect. The term is also used where portions of a pattern, such as outlines, fall on top of blotch portions of the print. In either case great care is necessary in printing, to avoid distortion and disturbance of the design during the process of reproduction.

The author describes the production of half-tones by stippling, both by hand and by photographic methods; and the technique of producing half-resists, using both mechanical and chemical resisting agents.

In discussing the "fall-on" process he points out that the use of this technique calls for careful study of the design prior to engraving, and the careful use of stippled effects, but that where properly used, very fine shaded and colored effects may be obtained with the minimum number of rollers. He states that the engraving technique required is expensive and can only be applied to high-grade fabrics.

A similar technique to what has been described for roller printing may also be practiced in silk screen printing. The author mentions various troubles which the screen printer is likely to encounter, and suggests ways of overcoming them.—W.H.C.

Selection of Surface-Active Agents. A Discussion of the Properties and Uses of Various Soaps, Synthetic Detergents, and Wetting, Leveling and Dispersing Agents

I. Teplitz, *Textile Age* 14, No. 6, 22-25; No. 7, 20-22, 1950.

There have been many conflicting claims regarding the relative merits of soaps, the synthetics, and synthetics among themselves. At one time, opinion was that the synthetics would eliminate the use of soap altogether from textile processing; at the present time this view has been tempered, and it is felt that there is a place for soap and a place for synthetics. There has been an almost unlimited introduction of brand names and different types of synthetic surface-active agents and this has been extremely confusing to the dyeing and finishing industry in attempting to evaluate the claims and the products, and a key to the selection of surface-active agents is in order.

The selection may be classified as to detergent, wetting, leveling and dispersing properties, as well as the special class of those with cationic properties. A detergent is not necessary in dyeing, a wetting agent serves the function, perhaps better; in certain cases a leveling agent or dispersant is necessary. In the case of one-bath scour-dye process of viscose rayon, the surface-active agent must have detergent and wetting and leveling properties.

The sensitiveness of soap to hard water, and the various means for correcting it, are discussed; also anionic, nonionic and cationic surface-active agents and their respective uses. The author remarks, "The concentration of surface-active agent should be regulated so as to obtain optimum results. The fact that ½% concentration of product does an efficient job does not make a 5% concentration 10 times better."—W.H.C.

TRADE NOTES • NEW PRODUCTS

• H. J. McAteer Appointed Sales Agent

Daniel H. Jones Laboratories, Inc., 222 Liberty Street, Camden 4, N. J., have announced the appointment of H. J. McAteer, 45 E. 17th Street, New York 3, N. Y. as their sales agents for mothproofing compounds for the woolen and worsted industry.

• Committee on Atmospheric Pollution Formed

The need for research, analysis, and special instruments to combat air pollution has prompted the Board of Directors for the American Society for Testing Materials to authorize the formation of a new technical committee on Sampling and Analysis of Atmospheric Pollution. Dr. Louis C. McCabe, chief of Air and Stream Pollution, U. S. Bureau of Mines, has accepted the temporary chairmanship of the new committee. In authorizing the committee the Board stated that the Society will not consider the problems of specifying limitation of pollution, nor such other related matters as biological and health problems.

Much research is already under way in this field, directed toward the development of instruments by which a single or a few contaminants will be measured, it is reported, but studies will continue in various channels on contaminants to be measured which will offer a true index of the nature and extent of atmospheric pollution.

The seriousness of air pollution from an economic standpoint, not to mention the health standpoint, can be observed in the fact that expenditures for modern abatement plants alone cost the country about $58,000,000 during 1948.

The committee's chief aim will be to reach agreement on this phase of sampling and analysis through the procedure of developing acceptable standard tests and analytical methods.

• Future A.S.T.M. Meeting Dates

The national meetings of the American Society for Testing Materials will be as follows:

March 5-9, 1951—Spring Meeting and Committee Week, Cincinnati, Ohio.

June 18-22, 1951—Annual Meeting, Atlantic City, N. J.

March 3-7, 1952—Spring Meeting and Committee Week, Cleveland, Ohio.

June 23-27, 1952—Annual Meeting, New York, N. Y. (The bienneial Apparatus and Photographic Exhibits will be held in conjunction with this meeting).

Committee D-13 on Textile Materials will meet October 18-20, 1950 in New York, N. Y. The Ohio Valley District will meet on October 13, 1951, at Columbus, Ohio on the subject of air and stream pollution.

• Registration Dates Set at FDC

Registration for all day and evening courses in textiles for the Fall Semester at Fairleigh Dickinson College, Rutherford, N. J., will begin on September 11 and continue through September 15, according to Herbert R. Mauersberger, director of the Textile Department. All evening courses begin at 6:55 and last until 10:30.

Courses to be offered include the following:

Orientation in Textiles—H. R. Mauersberger, 2 credits. Day and evenings. A general textile course covering all phases of textile activities.

Identification, Analysis and Testing—Gordon Turner, U. S. Testing Co., Hoboken, N. J. 4 credits. Evenings only.

Raw Materials—H. R. Mauersberger. 4 credits. Day and evenings.

Textile Chemistry—Charles Minoff, Texstyle Mfg. Co., Clifton, N. J. and Herman Bauman, United Piece Dye Works, Lodi, N. J.

Dyeing and Printing—George Decoyf, Supervisor of Dyeing, United Piece Dye Works, Lodi, N. J. *Printing*—Francis Richardson, Waldrich Company, Delawanna, N. J. 4 credits. Evenings only.

Finishing of Piece Goods—Marcel Pagerie, formerly with Allied Textile Printers and Raytex Dyers and Printers, Inc., Paterson, N. J. 4 credits. Evenings only.

For details write to the registrar of the college or telephone Murray Hill 4-1159 in New York.

• LTI War Emergency Program Set Up

Possible contributions by the Lowell Textile Institute to the national welfare in the event of a continued war emergency are described in an 18-page brief prepared under the direction of President Martin J. Lydon and Dr. G. Nathan Reed, Dean of Faculty at the Institute. The brief contains a delineation and evaluation of the instructional and research facilities which can be used to military and civilian advantage in a war economy. The programs are designed to ensure the training of an adequate supply of scientific and technical personnel to assume positions of responsibility in the textile, paper, leather and allied industries, and in the various government services.

The plans formulated outline the procedure whereby the day school curriculum in textiles, leather, and paper can be accelerated in such a fashion as to permit the granting of Bachelor of Science degrees in chemistry, engineering and manufacturing at the conclusion of 2 to 2 2-3 years of study. Provision is also made for supplementing the day school program by the addition of special courses (i.e., electronics, radio, meteorology, etc.). Such courses, coupled with blue print reading, machine design, and shop mathematics would also be offered in the evening school. The instructional program would proceed simultaneously with special research work.

Dean Reed recently concluded a trip to Washington in which he consulted with governmental and industrial authorities concerning the manner in which these plans can best be put into operation.

• Judges Named for SPE Prize Paper Contest

Gerald H. Mains has been appointed chief judge of a panel of five for selecting the three top papers of those submitted in the forthcoming 1950 Prize Paper Contest of the Society of Plastic Engineers, Inc. Others named by Henry M. Richardson, Chairman of the contest, include Albert G. H. Dietz, R. G. Chollar, Carl Frosch and J. O. Reinecke.

Papers of interest to the plastics industry are being sponsored by the local sections of the Society and will be judged primarily on the basis of the value to the industry or the engineering profession and on the skill with which the subject is analyzed and presented.

The only requirement for submitting a paper is that it be of interest to the plastics industry, that it has not been previously published, and that it be submitted by Nov. 15 to a local section. Aside from local section prizes, the national prizes are: *first* $200.00, *second* $100.00 and *third*, $50.00.

The three top papers will be presented at the Annual National Technical Conference, Jan. 18-20, in the Statler Hotel, New York, N. Y.

Additional information relative to the contest may be obtained by contacting the Society of Plastic Engineers, Inc., 409 Security Bank Building, Athens, Ohio.

• Color Fixative Price Drop

E. W. Gamble, Jr., textile chemicals director of Monsanto Chemical Company's Merrimac Division has announced that effective immediately, Dyefixative 105 will be delivered at 38 cents a pound in carload lots and 40 cents a pound in 500-lb. barrels.

The product, a direct color fixative for rayons and cottons, is designed to improve fastness properties of selected direct colors.

• New Anders West Coast Representatives

The Great American Color Company has been named West Coast representative for the Anders Chemical Company of East Rutherford, N. J. They will stock the complete line of Andotex pigment printing colors, it is reported. All inquiries from the West should be made to the Great American Color Co., 2512 W. Ninth St., St. Los Angeles, Cal.

NEW LITERATURE

"Testing Terms for Better Understanding"—a revised edition by United States Testing Company, Inc., 1415 Park Avenue, Hoboken, N. J. The growing demand for merchandising facts and informative labels is reported to have prompted this reprinting, with latest innovations in merchandising testing included. It lists important tests of merchandise used by the United States Testing Company, defines textile terminology and apparatus used in specific tests, and gives standard and minimum specifications where available. Single and quantity copies are available upon request to the Consumer Service Division of U. S. Testing at the above address.

* * *

"Your Most Important Raw Material"—Hall Laboratories, Inc., Hagen Building, Pittsburgh, Pa. Descriptions and charts of facilities and services offered in coping with industrial water problems of all kinds—procurement, treatment, usage and disposal—are handled in this booklet. A front-cover illustration points up the importance of water in all kinds of industries and industrial operations by diagramming the amount of water needed to produce a ton of each of several kinds of products (830 for rayon, 160 for wool fabric, etc.). Available on request.

* * *

"Steel Castings Handbook"—a revised 1950 edition by the Steel Founders' Society of America, 920 Midland Building, Cleveland 15, Ohio. An outstanding reference volume on steel castings and the steel casting industry. 520 pages, 440 photographs and sketches pertinent to text, 120 tables. Price—$4.00. Copies may be obtained by writing to F. Kermit Donaldson, executive vice president at the above address.

"Some Aspects of Chlorine Retention by Resin-Treated Fabrics"—reprints of a paper by A. C. Nuessle and J. J. Bernard of Rohm and Haas Company, Philadelphia, Pa. (This article appears in AMERICAN DYESTUFF REPORTER 39, No. 12 P396-403). This is a 6000-word research report on the subject of chlorine pickup by fabrics containing nitrogenous resins when subjected to hypochlorite bleaching baths. The study relates principally to rayon fabrics treated with urea-formaldehyde and melamine-formaldehyde resins — and probes the effects of chlorine pickup on (a) yellowing during chlorination and (b) loss of tensile strength on subsequent ironing. Copies may be obtained from Rohm & Haas Company at Washington Square, Philadelphia 5 Pa.

* * *

"Bulletin No. 5003—Taber Abraser Standard Abrasion Testing Set, Model 140"—Taber Instrument Corporation, 111-TCC Goundry Street, North Tonawanda, N. Y. A comprehensive bulletin containing descriptive material and numerous detailed photographs of parts, accessories and abrasion samples. A listing of prominent users of the Taber Abraser (industry, government, and universities) is also included. Available on request.

* * *

"The Serviceability of Fabrics"—PB 110,281, 54 pages. Price $1.50. A bibliography, prepared by the Philadelphia Quartermaster Corps Technical Library, providing descriptive references on 168 studies, encompassing both field deterioration tests and laboratory investigations of wear and abrasion. Materials included cover the period 1936-1949. An author index is included.

* * *

"Bibliography on Container Coatings"—PB 100,864, 44 pages, $1.25. A bibliography prepared by the Army Quartermaster Technical Library in Philadelphia, providing abstracts of some 150 patents and research papers on food and other types of container coatings, published since 1941. Author, inventor and patent indexes are included.

* * *

"Bibliography on the Solubility of Argon, Carbon Dioxide, Helium, and Nitrogen in Organic Liquids"—prepared for the Atomic Energy Commission. This provides 137 abstracts from readily accessible literature on these subjects published since 1934. Information is included relating to experimental techniques used for the determination of the solubility of gases in liquids. In addition to a 10-page subject index, a special reconciliation of the entries with Chemical Abstracts references is provided. Order PB 110,538, 51 pages, 20 cents.

(All three of the above bibliographies may be obtained from the Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C.).

NEW PRODUCTS

• Pigment Printing Colors by Aula

Aula Chemicals, Inc., 131 Dey Street, Jersey City 6, New Jersey, have recently completed work on resin emulsion pigment printing colors which are 'oil-in-water type emulsions and dilute with water. Back grays can be eliminated. Great brilliance of colors, good color mileage, excellent laundering resistance, plissé resistance, and chlorine resistance are some of the advantages claimed. It is stated that blotches are clean, colors are stable and permit high-speed machine operation. A full color range is available. It is also stated that engraved rollers, rubber blankets, color boxes, and brush rollers wash with ease with water. Plant test runs may be arranged and in screen printing dyestuff screens can be used. The company states that favorable comments have been received from users and that production facilities are being increased.

• Addition to Edwal Line

Edwal Laboratories, Inc., Ringwood, Ill. have announced the addition of Diallyl

Amine in pilot plant quantities to their line. Its chemical properties are reported to be typical of secondary amines. Edwal suggests its use as a pharmaceutical and resin intermediate or in organic syntheses.

The product is white, having a fishy and ammoniacal odor. Its molecular weight is approximately 97; at 25°C. it has a specific gravity of 0.7854, a refractive index of 1.43%, and a solubility in water of 8%. The boiling range is from 106-108°C. and it is reported miscible with ethanol, ether, benzene and mineral oil.

• Synthrez F Added to Synthron Line

A new member to the Synthron, Inc. family of urea-formaldehyde resins has been added in Synthrez F, a concentrated water solution of a modified, fairly low polymer urea formaldehyde resin. It is reported to be a clear, thin liquid, readily soluble in water of all proportions and extremely stable to storage.

For general use, 1-5% Synthrez F is employed, together with appropriate catalysts, it is stated. Curing, washing and dimensional control during finishing are reportedly analogous to conventional urea-formaldehyde precedures.

The product is used to obtain durable finishes and shrinkage control effects on cotton, rayon, or blended fabrics, the company states, and in conjunction with crushproofing resins, it is said to impart improved resilience and fullness.

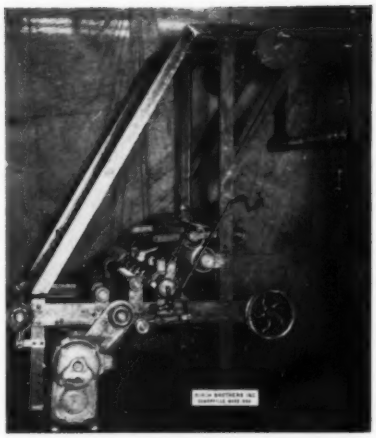
Further details may be obtained by writing to Synthron, Inc., Ashton, R. I.

• Individual Vacuum Extracting Machine

Uniform extraction without damage to fabrics as well as a better and loftier "hand" produced are two keynotes of a new individual vacuum extracting machine recently introduced by Birch Brothers, Inc., Somerville, Mass. The company reports excellent results with the amount of moisture left in the fabric, in most instances, less than when squeeze rolls are employed.

The machine, which is built in all widths, is composed of a pair of substantial side frames on which are mounted the tension rails, guide rolls, spiral roll for removing wrinkles, the vacuum extractor, the draw rolls, and a folder. Special features include the patent adjustable slot vacuum extracting box and fittings with automatic ring type slot seals.

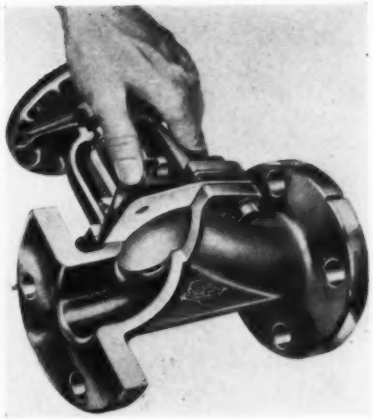
It is equipped with a variable speed drive. Usual speeds are up to 80 y.p.m. on rayons and blends, 100 y.p.m. on cottons, and 35-45 y.p.m. on woolens and worsteds.



Birch Bros. Vacuum Extracting Machine

• New Chemically Inert Diaphragm Developed

The Grinnell Company, Inc., Providence 1, R. I. is now offering a new, chemically inert diaphragm for Grinnel-Saunders diaphragm valves which have been altered to permit the use of a backing sheet to cushion and protect. The diaphragm is a thermoplastic, moulded to form a tough and flexible product which can withstand materials which readily attack rubber and synthetic diaphragm materials.



Grade K Grinnell-Saunders Valve Showing Diaphragm

Service conditions include pressures up to 100 psi and temperatures up to a 225°F. maximum at the lower pressures. The diaphragms are not for use under continuous vacuum conditions.

They will be known by the trade name Grade K (KEL-F*) Grinnell-Saunders valve diaphragms.

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* Trade name registered by M. W. Kellogg Company.

PERSONNEL

According to an announcement by Louis Aronson, president of United Aniline Company, Boston, Mass., ARTHUR MARTIN, plant manager of the Bradford Dyeing Association, Montreal, Que. has resigned to accept a position as Canadian representative of the Boston firm. It is reported that Mr. Martin will be available for consultation and advice to chemists and dyers in mills serviced by United Aniline's Montreal office. He started his long career in the dyeing and finishing trade thirty years ago with the Consolidated Piece Dyers, Ltd., of Montreal, which was absorbed by Bradford last year, and worked his way up to plant manager.

* * *

CLARENCE SCHREUR, AATCC Pacific Coast Section councilor, recently resigned as branch manager of the Los Angeles factory of Jacques Wolf & Co., and is now active as a partner in a new concern operating under the name "Formulabs". The company offers three types of media for ready mixed coloring (i.e., lacquers, pigment emulsions and water-dye preparations). Mr. Schreur, a registered chemical engineer, will direct the research program for the new company at 36 W. Green St., Pasadena, Cal.

* * *

To fill vacancies created with the resignation of E. H. DOBBINS as superintendent of dyeing and finishing at the Riegel Textile Corporation's Trion Division Plant, Trion, Ga. N. B. Murphy, vice president and general manager has announced three promotions. CHARLES P. GORDON, JR. has been named superintendent. Mr. Gordon, current secretary of the South Central Section of the AATCC, began his career with Riegel at its Ware Shoals Division. He was transferred to Trion in 1937. As the outstanding senior in the Textile Chemistry and Dyeing Department of the Clemson College Textile School in 1935 he was awarded the "Textile Colorist" medal by H. S. Neiman, editor. JOSEPH H. O'NEILL, chairman

Charles P. Gordon, Jr.

of the South Central Section of the AATCC, has been moved up to general assistant superintendent. Mr. O'Neill, who has been a chief chemist at Riegel for seven years, began his career in 1926 as assistant dyer at the Standard-Coosa-Thatcher Co., Chattanooga, Tenn. After four years he went to Eagle and Prenix Mills, Columbus, Ga., as dyer and chemist. ERNEST FREEMAN, JR. fills Mr. O'Neill's former post as chief chemist. He came with Riegel in 1946 as an assistant chemist in the laboratory and was transferred to the dyeing department as second hand in January of this year.

* * *

David R. Meslang

DAVID R. MESLANG has been appointed manager of the Seattle Branch of the Crucible Steel Company of America according to an announcement by W. H. Wievel, vice-president in charge of sales. He has been associated with Crucible since 1935, when he joined the San Francisco Branch. Mr. Meslang has served with the company in the Syracuse, N. Y., Metallurgical Laboratory and as a salesman with the San Francisco Branch. He had been with the Seattle Branch previously as office manager prior to his entry into the Army.

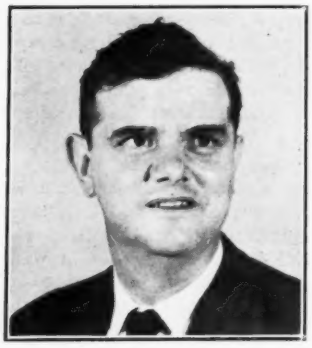
Joseph H. O'Neill

William M. Shine

WILLIAM M. SHINE has joined the Plastics Department of Arnold, Hoffman & Co. Incorporated, and will be located in their New York office in the Empire State Building. Mr. Shine has spent the last ten years in the plastics industry in research and market and sales development. He was formerly associated with the Central Sales Development Department of General Aniline & Film Corporation. Prior to that he was with the Plastics Department of the General Electric Company.

* * *

JOHN EDWARD BOEHEIM has joined the staff of Evans Research and Development Corporation as a research assistant.



F. B. Havens

The appointment of F. B. HAVENS as Pacific Coast regional manager has been announced by L. Sklarz, sales manager of the pigment department, American Cyanamid Company, Calco Chemical Division. Mr. Havens, who was formerly a technical field service representative in that department, will make his headquarters in San Francisco. He has been associated with the protective coatings and dry color inlustries for the past twenty years, it is reported. Prior to his joining Calco in 1945, he was vice president and chief chemist of the Prince Manufacturing Company.

* * *

With the appointment of DON C. OSKIN, current phosphate division sales manager of the Westvaco Chemical Division, Food Machinery and Chemical Corporation, New York, to the position of director of district sales, JAMES R. HARRIS, JR. has been named to fill the post. Mr. Oskin was at one time resident manager of Detroit and subsequently division sales manager at New York in charge of alkali and phosphate sales. In his new position, it is reported, Mr. Oskin will correlate the activities of Westvaco branch offices throughout the country. These moves are said to be in anticipation of the addition of a third electric furnace for the production of elemental phosphorous at the company's Pocatello, Idaho plant and the construction of a new processing plant at Lawrence, Kansas.

OBITUARY

HENRY E. TILLSON

HENRY E. TILLSON died suddenly on July 28, 1950. Mr. Tillson, a salesman for General Dyestuff Corporation and a member of the AATCC, was one of the first graduates of the Lowell Textile School. He began his career as a dyer in 1905 and was engaged in that capacity until 1910. He became manager of a dye works in 1912 and remained until 1918. In that year he joined Kuttroff, Pickhardt & Company, predecessor to the General Dyestuff Corporation.

Mr. Tillson is survived by his wife and two daughters.

SANDOZ PRESENTS *The color achievement of the month*

Spring-in-Summer ...BY DAN RIVER MILLS

For warm weather, Dan River rayon suitings give as much that is *practical* as they do that is *stylish.*

Around-the-clock, they keep their trimness by resisting wrinkling. Week-by-week, they keep their original fresh colors by resisting those twin hazards of summertime — harsh sunlight and perspiration.

For many rayon and also cotton fabrics that must be sun-fast and perspiration-fast, Dan River Mills and many other mills have had great success with *direct* dyes — using Sandoz colors and Sandoz' new after-treatment for direct dyes called SANDOFIX WE.

SANDOFIX WE gives results on cellulosic fibres that formerly required much more expensive methods of dyeing. It greatly improves fastness to both acid and alkaline perspiration, water and hot wet pressing. In the plant, it has eliminated many "seconds" because it prevents bleeding or migration of color and staining of white acetate effects whenever (due to unavoidable delays in getting them dried) the goods lie around in the wet state.

For fabrics which are subsequently given a stabilized finish, a SANDOFIX WE treatment immediately after dyeing prevents bleeding of color in the resin bath.

Send for a free sample. And for any chrome, acid or direct dyes or auxiliary chemicals for both natural and synthetic fibres . . . be guided by the Sandoz "color achievements".

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N. Y.

Application laboratories and stocks at Boston, Philadelphia, Charlotte, Chicago, Los Angeles, Toronto • Other branches at Providence, Paterson and Montreal

SANDOZ *thinks ahead with textiles*

CONTROL

Millions of tons of water stored in giant reservoirs represent a triumph of engineering skill. Here, control is as important as capacity.

The processing of the miles of yard goods going through your mill also demands a controlled operation.

The all-purpose de-sizing agent—Diastafor Brand Type L—gives you outstanding help in the control of your finishing and dyeing right from the start.

It's easy to get a good finish when you use Diastafor. It does the thorough de-sizing job that is essential to keep finishing operations trouble-free.

With Diastafor, you get a good hand quickly. De-sizing operations can be controlled and simplified by Diastafor's workability in a very wide temperature and pH range. It meets every enzyme de-sizing requirement; is ideal for use in continuous processing.

This versatile de-sizing agent is kind to the most delicate fabrics. There's never any impairment of tensile strength. It helps to give you even, unshaded dyeing, with no streaks or blemishes.

Finishing control with Diastafor can be very inexpensive, too. Write us for further information and prices. Standard Brands Incorporated, Diastafor Department, 595 Madison Avenue, New York 22, New York.

DIASTAFOR

A TRADE MARK OF STANDARD BRANDS INCORPORATED

SOLUOL
CHEMICAL CO., INC.

Manufacturing Chemists

NATICK, R. I.

Specializing in Materials and Processes for the Manufacture, Dyeing and Finishing of Silk, Rayons, Synthetics, and Fine Cottons.

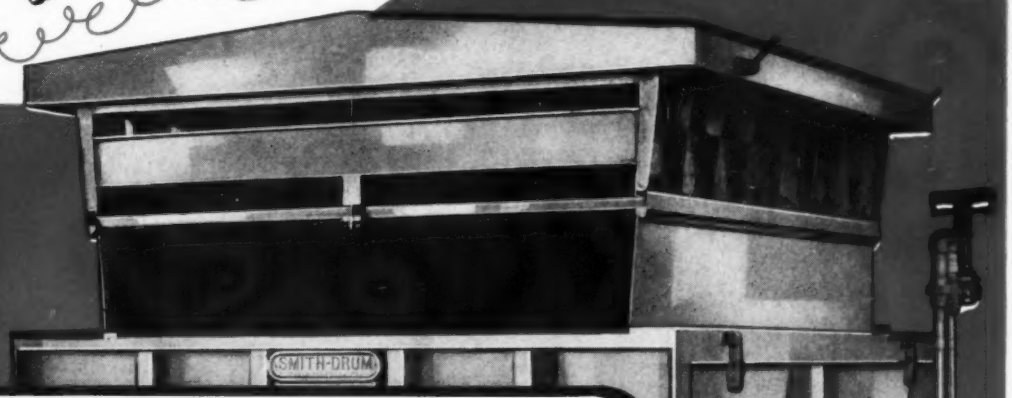
A Partial Roster of Distinguished Products:

*SOLUOL	versatile finishing oil for silk, rayons, and fine cottons . . . for optimum softness and drape
*SOLUCENE . .	unique softener and finishing agent for rayons and fine cottons . . . for soft, full and mellow hand
*SOLUWAX . . .	emulsifiable finishing waxes for imparting weight, body and smoothness to rayons, and fine cottons
*AQUAGARD . .	aluminum-salt, wax-emulsion water-repellents for rayons and cottons
*AGF	gas-fading inhibitor for acetate rayons
*EXOL	dyeing oils for viscose, acetate rayon, and nylon
*EXAVON	powdered synthetic detergent for boiling-off rayons, soaping prints, etc.
*EXAMIDE . . .	paste-form synthetic detergent and boil-off agent for rayons
*SYNTHECIN . .	sizing treatment for preparing rayon crepe yarns
*EMULSIONON .	silk-soaking oils for warp-stock, crepe and hosiery yarns.

* Reg. U. S. Pat. Off.

Keeps Yarn FREE from SNARLS

Insures LEVEL Shades



The SMITH-DRUM *Pulsating* Skein Dyeing Machine

This machine introduces, for the first time in this country, the pulsating or intermittent flow principle of skein dyeing.

OFFERS THESE MAJOR ADVANTAGES:

1. **Quality—**
   Yarn free from snarls and felting.
   Lofty handle of yarn.
   Uniform dyeing, even in extremely large lots.
   Complete change of liquor every 45 seconds.
2. **Economy—**
   Saves floor space, chemicals, dyestuffs, water and steam.
3. **Versatility—**
   Handles everything from coarse carpet yarn to finest worsted and cashmere yarns . . . in batches up to 3000 lbs.

{Licensed by Samuel Pegg and Son}

WRITE FOR OUR NEW CATALOG NO. PSD-806, WHICH FULLY EXPLAINS THE MANY ADVANTAGES OF THE PULSATING FLOW PRINCIPLE.

SMITH, DRUM & COMPANY

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147-153 WAVERLY PLACE — NEW YORK 14, N. Y.

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beverage tubing

Whatever your industrial requirement . . . pressure tubing, stock line tubing, decorative tubing, cooling coils, sanitary beverage tubing . . . the complete TRENTWELD line of quality stainless and high alloy tubing is your best bet! TRENTWELD is made in a *tube* mill by *tube* engineers . . . and is designed for rugged dependability, long life and economical service.

Trent Tube Company *specializes* in the production of stainless and high alloy tubing . . . and that means you get expert advice on applying TRENTWELD to your needs. And you get fast service on delivery because of Trent's convenient mid-continent location. You're assured of finding what you need . . . the complete TRENTWELD line ranges from 1/8" to 30" diameter inclusive.

To meet your stainless or high alloy tubing requirements . . . better . . . TRY TRENTWELD! Write for TRENTWELD Data Bulletin.

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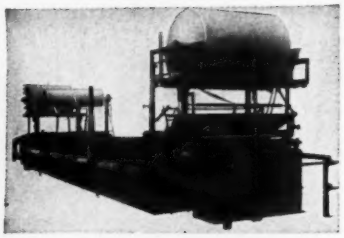
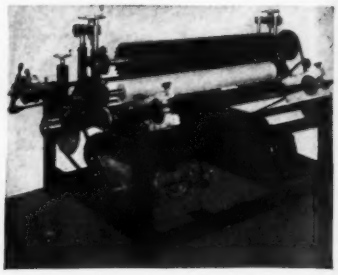
STAINLESS STEEL TUBING

Some Outstanding
HINNEKENS MACHINES

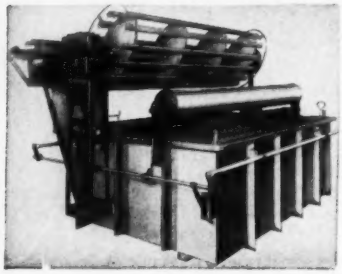
Continuous Desizing, Bleaching, Scouring and/or Causticizing



Flexible Boil-Off Machine

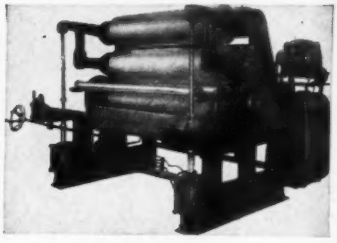


Moire Scratching Machine



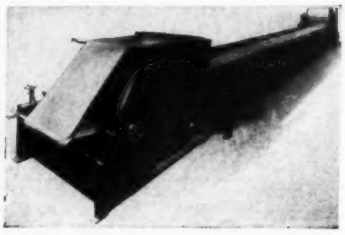
Dye Beck

Jigger

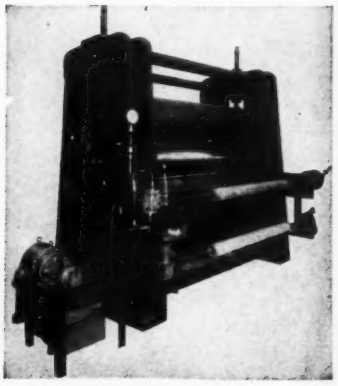


3-Roll Padding Machine

Tentering Frame



Palmer Tenter Unit



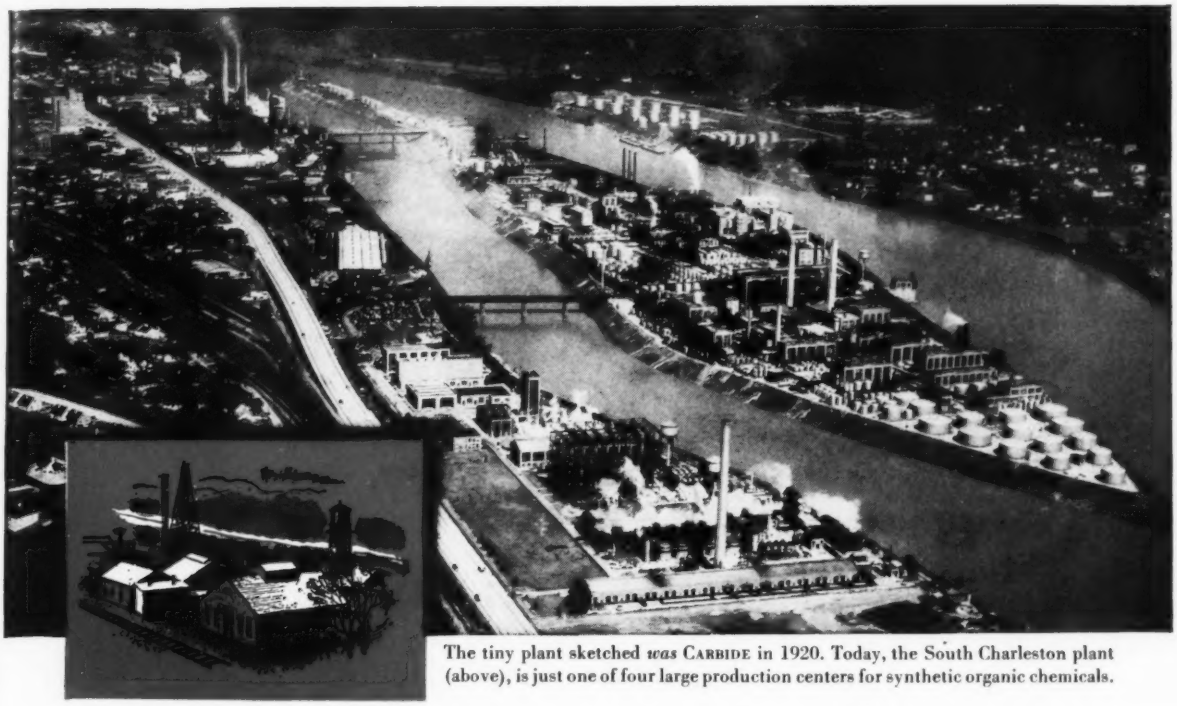
Hydraulic Calender

In addition to the machines shown above, we also manufacture a complete line of textile dyeing and finishing equipment, including Dye Reels — Embossing Machines — Quetsches — Beamers — Examining Machines — Tubing Machines — Dryers — Mangles — Rolls — Kettles — and other equipment, distinguished by better design and functional excellence.

HINNEKENS

HINNEKENS MACHINE CO., INC., 207 GODWIN AVENUE, PATERSON, N. J.

Specialists in fabrication of stainless steel equipment.



The tiny plant sketched *was* CARBIDE in 1920. Today, the South Charleston plant (above), is just one of four large production centers for synthetic organic chemicals.

Synthetic Organic Chemicals for the Textile Industry

■Back in the "twenties" CARBIDE introduced CELLOSOLVE Solvent to the textile industry. This new and useful organic chemical was rapidly adopted to improve printing and dyeing operations.

CELLOSOLVE Solvent was one of the first products of a new and different chemical enterprise. Since then CARBIDE has developed scores of synthetic organic chemicals with important uses in the textile and other industries.

From the "twenties" right on through today our technical service to textile producers has been a constant and growing function. Now, as always, our chemically trained representatives are ready to help you in applying synthetic organic chemicals to your product and processes. Just a 'phone call or a postcard to any CARBIDE office will get you technical help when you need it.

"Carbitol", "Cellosize", "Cellosolve", "Carbowax", "Flexol", "Kromfax", "Tergitol", and "Ucon" are trade-marks of Union Carbide and Carbon Corporation.

Some of these products used in various phases of textile processing are:

Ethylene Dichloride
CARBITOL Solvent
Diethylene Glycol
Acetone
Synthetic Ethanol
Ethanolamines
CELLOSIZE Hydroxyethyl Cellulose
KROMFAX Solvent
Ethyl Acetate
Acetic Anhydride
TERGITOL Surface Active Agents
Ethylene Amines
CARBOWAX Compounds
FLEXOL Plasticizers
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Manufacturers of

SURFACE TENSION CHEMICALS, PROCESSING SPECIALTIES FOR TEXTILES AND SYNTHETIC FINISHES

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Intrals, 224-229-384
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Azocel B

Softeners
Intracol, Softener FG
Negamine 142A

Carbonizing
Tensols

Scouring Agents
Intramines

Leveling Agents
Tensols, Intramines
Intracols, Intrals
Azocel B

Lubricating
Intracol
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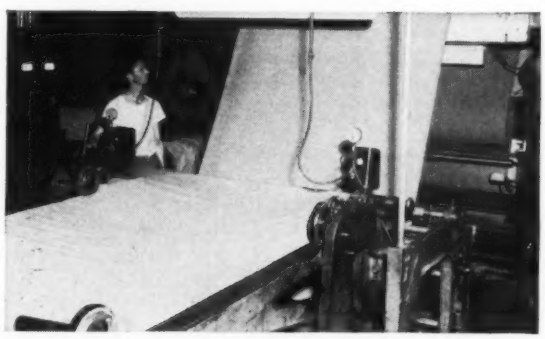
PRODUCTS FOR SYNTHETIC FINISHES

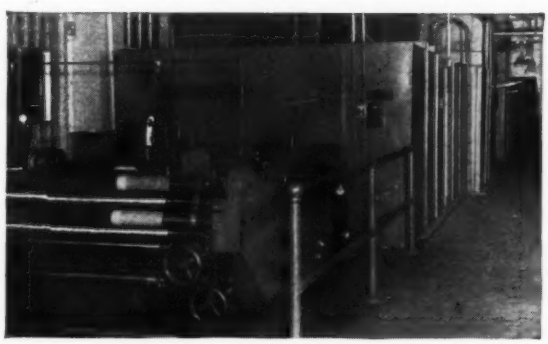
SOTEX N—for water dispersable paste
SOTEX NC—for lacquers and coating materials
SOTEX 3CW—for dispersion organic and inorganic pigments
SOTEX C—for soft textured pigments
SOTEX C, SOTEX NC, SOTEX 3CW—for alkyds modified phenolics and melamines
SOTEX 3CW, SOTEX CW—for vapo set vehicles or glycol resins
SOTEX CW, SOTEX WO—for vinyl vehicles

Samples and Technical data upon request.

PROCTOR
PIN TENTER FINISHING

CONTROLLED OVERFEED . . .
assures **ACCURATE GUIDING . . . . . .**
BALANCED DRYING . . . . . .





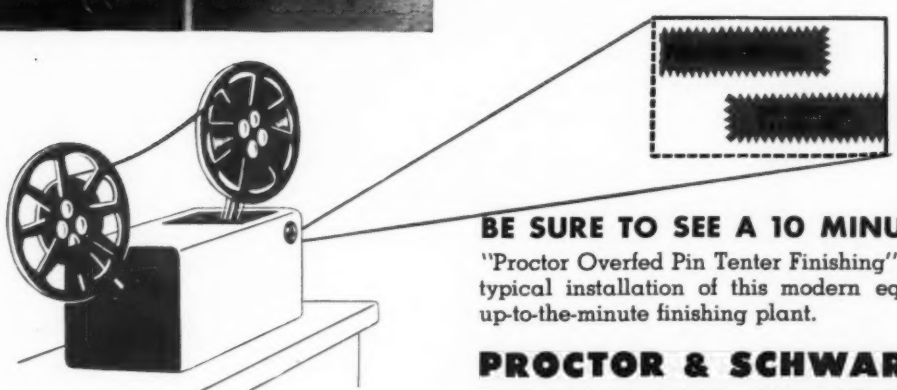
BY VISITING BOOTH 42 & 43 A.A.T.C.C. CONVENTION—WENTWORTH-BY-THE-SEA SEPTEMBER 28, 29, 30

Proctor overfed pin tenter finishing offers controllable overfeed with the cloth uniformly deposited on the pins in any percentage from —5% to + 35%. Accurate guiding is possible by means of an improved electro-hydraulic positive displacement guider which operates with extreme accuracy on all fabrics. Balanced drying, the third ingredient for top quality pin tenter finishing, is made possible by a special nozzle system which assures maximum drying speed without distortion.

Only Proctor pin tenters offer demonstrated results combining all three features.

If you are a cloth finisher, you can't afford to overlook the Proctor pin tenter—that is producing quality fabric results at the rate of more than 75 million yards annually.

Proctor overfed pin tenters are available in either the vertical (Dalglish) or horizontal type (in cooperation with Winsor & Jerauld) for laces, tricots, specialty goods, as well as standard fabrics.



BE SURE TO SEE A 10 MINUTE FILM . . .
"Proctor Overfed Pin Tenter Finishing" which shows a typical installation of this modern equipment in an up-to-the-minute finishing plant.

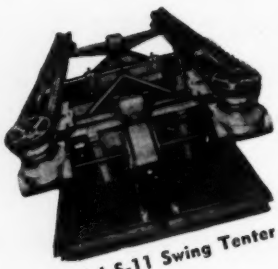
PROCTOR & SCHWARTZ, INC.
735 TABOR ROAD, PHILADELPHIA 20, PA.

Winsor & Jerauld

MANUFACTURING COMPANY INC.

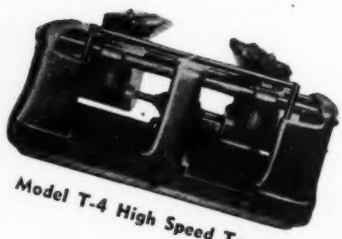
1268 EDDY STREET, PROVIDENCE, R. I., U.S.A.

Builders of Fine Cloth Finishing Equipment since 1900



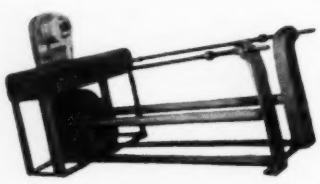
Model S-11 Swing Tenter

IN ADDITION TO ENGINEERING AND SUPPLYING ENTIRE MERCERIZING PREPARATORY AND FINISHING RANGES, WINSOR & JERAULD'S EQUIPMENT INCLUDES—

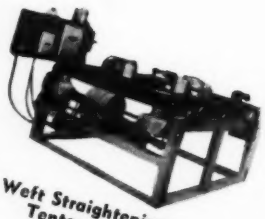


Model T-4 High Speed Tenter

1. "Over and Under" Model Tenter Frames
2. High Speed Straight Tenter Frames
3. Swing (Oscillating) Tenters
4. Electrical or Mechanical Overfeed Clip Type Tenters
5. Tension Controlled Batchers
6. Tension Controlled Beamers
7. Tension Controlled Letoffs
8. Electrical Nylon Setting Equipment
9. Radial or Gate Type Compensating Equipment
10. Single or 2 Drum Winders with or without cutoff
11. Electrically Controlled Guiders
12. Mechanical or Pneumatic Bow Controls
13. Open Width Washing Ranges
14. 2 or 3 Roll Pads
15. Mangles and Quetches
16. Scrays (J-Type and Continuous)
17. Swivel Letoffs
18. Counting, Measuring & Lubrication Devices for Tenters



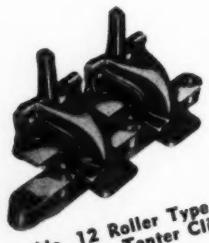
Duplex Tension Controlled Batcher



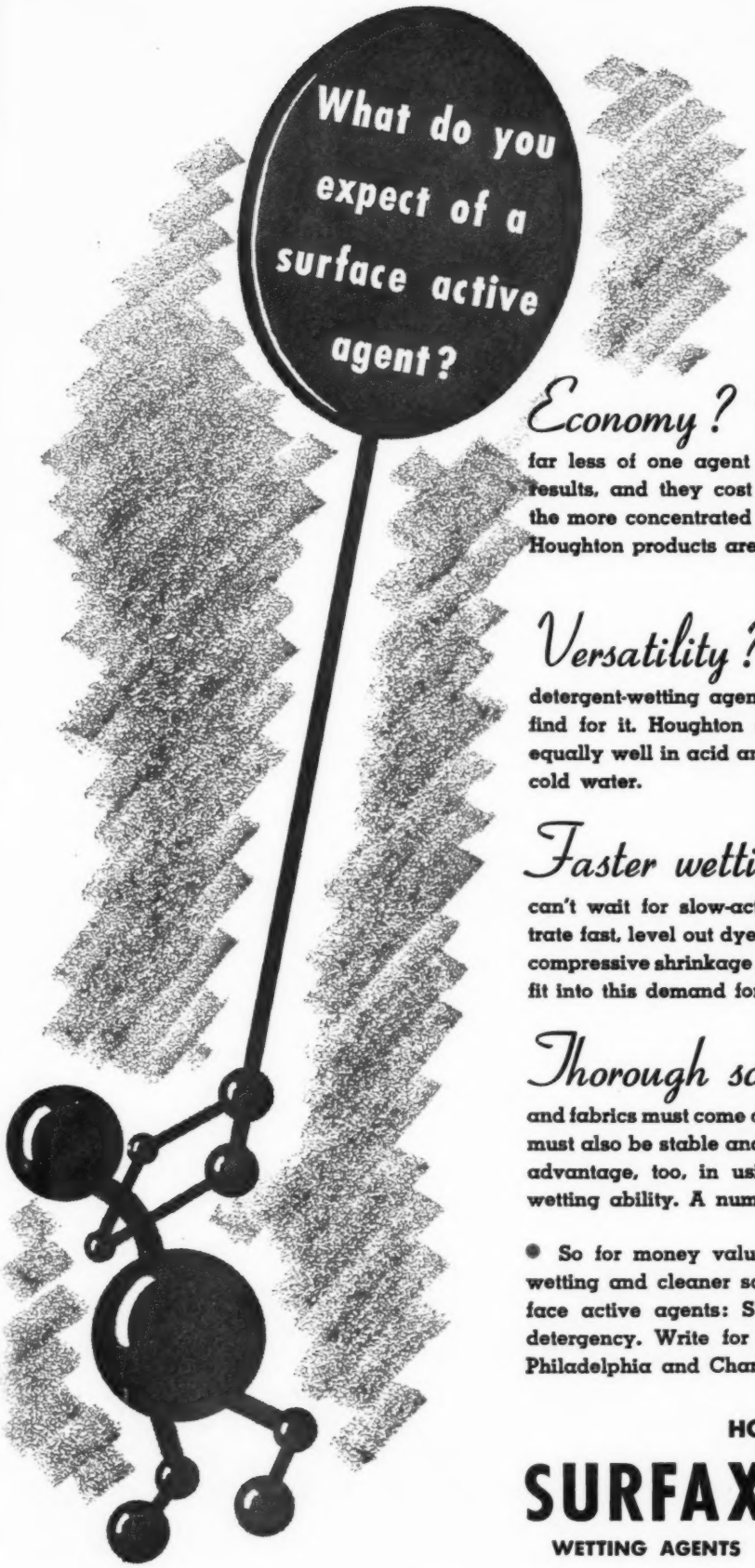
Weft Straightening Tenter Frame

Model J-3 "Reflected Light Type" Weft Straightener

Replacement parts for all models of Winsor & Jerauld machinery since 1900 and other makes.



No. 12 Roller Type Automatic Tenter Clip



Economy? Well, when you can use far less of one agent than of another to get the same results, and they cost about the same per pound, then the more concentrated one is certainly more economical. Houghton products are sold on money value.

Versatility? The more jobs a single detergent-wetting agent can do, the more uses you will find for it. Houghton agents are versatile; many work equally well in acid and alkaline solutions, and in hot or cold water.

Faster wetting? Production lines can't wait for slow-acting agents. They've got to penetrate fast, level out dyeing rapidly, give speedy aid in the compressive shrinkage process. Houghton's wetting agents fit into this demand for speedier processing.

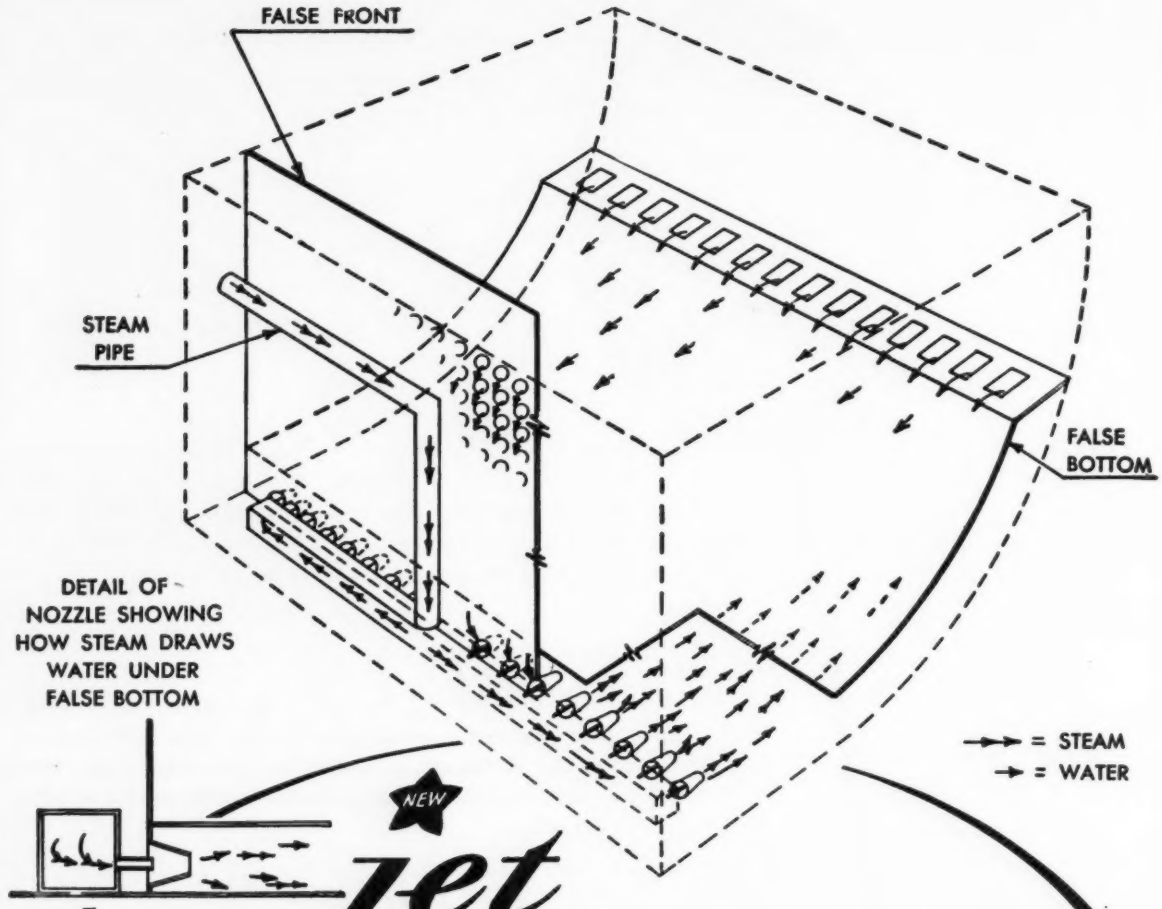
Thorough scourability? Yarns and fabrics must come clean when using a detergent which must also be stable and not promote rancidity. There's an advantage, too, in using a detergent which possesses wetting ability. A number of the *Cerfak* series do.

● So for money value, for range of work, for speedy wetting and cleaner scouring, depend on Houghton surface active agents: SURFAX for wetting, CERFAK for detergency. Write for bulletins. E. F. Houghton & Co., Philadelphia and Charlotte.

HOUGHTON'S

SURFAX *and* CERFAK

WETTING AGENTS **DETERGENTS**



NEW

Jet

HUNTER offers a highly superior PIECE DYE KETTLE

★ The Hunter "*Jet*" offers the newest conception of modern piece dyeing. For the first time it is now possible to maintain temperature levels accurately throughout the kettle. No longer will you have temperature varying from 10° to 20° from front to back during the dyeing cycle and boil-off period. The results are more uniform — even dyeing.

The new Hunter "*Jet*" kettle assures bright, clear, "on shade" colors—another asset to save you money and assure customer satisfaction. The dyestuff is distributed through the same jets to insure perfect balance and blending of colors.

For additional information describing the jet system and other improvements in dyeing machinery, write Hunter for Bulletin SK.

BUILT BY HUNTER — IT'S DEPENDABLE

JAMES HUNTER MACHINE CO. Hunter NORTH ADAMS, MASS.

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S. Alex Dalghren, Ivyland, Bucks County, Pa.
J. Everett Burdick, Grayson Lane, Newton Lower Falls, Mass.
E. G. Paules, 1762 West Vernon Avenue, Los Angeles, Calif.
Rudel Machinery Company, Ltd., Canada
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Hunter

JAMES HUNTER MACHINE CO., NORTH ADAMS, MASS. FOUNDED 1847.

"BERNCOLORS"

We proudly maintain the heritage of one of the oldest names in American Dyestuffs.

		Paper	Leather	Plastic	Wool	Silk	Cotton	Rayon	Acetate	Nylon
BERNABASE	Fast color bases						×	×		
BERNABON	Developed acetate colors								×	×
BERNACETINE	Special printing colors							×	×	
BERNACHROME	Chrome colors		×		×					×
BERNACID	Acid colors	×	×		×	×				×
BERNACYL	Acetate colors								×	×
BERNAFORM	Formaldehyde aftertreated						×	×		
BERNAGEN	Insoluble azo colors						×	×		
BERNALAN	Metallized acid colors		×		×					×
BERNALIZARINE	Fast acid colors				×	×				
BERNALOID	Solubilized vat colors						×	×		
BERNAMINE	Direct colors	×	×				×	×		×
BERNANTHRENE	Vat colors				×		×	×		
BERNAPLAST	Special plastic colors			×						
BERNAPLY	Union colors				×		×	×		
BERNAPTHOL	Developer or prepare						×	×		
BERNASALT	Fast color salts						×	×		
BERNASUL	Sulfur colors						×	×		
BERNAZINE	Basic colors	×	×			×	×			
BERNAZO	Diazotized and developed		×				×	×		
BERNOIL	Oil colors									

BERNARD COLOR & CHEMICAL CORPORATION

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Bernard Color & Chemical Corp.

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WE OFFER FOR YOUR CONSIDERATION OUR LATEST PRODUCTIONS IN

VAT DYESTUFFS

C. I.
Pr. 296 ORCOSOL VAT RED FBB SUPRASET DOUBLE PASTE or POWDER

A beautiful shade of Red fast to light, washing, soda boiling, chlorine, peroxide, mercerizing. It is very level dyeing, indispensable for machine dyeing and piece dyeing and is an excellent color for printing rayon and cotton.

ORCOSOL VAT YELLOW 4GF DOUBLE PASTE or POWDER FOR DYEING

A new pure greenish vat yellow of good fastness to light. It is very level dyeing, has good washfastness, soda boil, chlorine, peroxide and mercerizing. It is a non-competitive yellow for dyeing rayon and cotton.

ORCOSOL VAT GREY CL PASTE or POWDER FINE FOR DYEING

A new non-competitive neutral shade of vat Grey; excellent to light, fast to washing 100°C., fast to soda boil, chlorine, peroxide and mercerizing. Due to all around fastness and very good levelling properties, this color fills a perceptible gap in the scale of vat dyestuffs.

For detailed information or data regarding your own particular requirements, write us for further information.

Pick Your Wool Oil Winner

FROM THIS FLYING RED HORSE STABLE

The Complete Line of Socony-Vacuum Wool Oils Meets Every Need . . .

Each of the five *S/V Woolrex Oils* is tops in quality — differing only in scourability, resistance to discoloration and price. Each is tailor-made for the specific job for which it is recommended.

For example, *S/V Woolrex SS* is a *premium* oil with maximum scourability and excellent resistance to discoloration. *S/V Woolrex* 1000 is an economical product for application where maximum scourability and discoloration resistance are not vital. In between are *S/V Woolrex* 1500, 2000 and 3000—offering varying degrees of scourability and resistance to oxidation and priced accordingly.

Your Socony-Vacuum Representative will help you select—*on a price-performance basis*—the oils best suited to your operations. Call him today. He'll give you complete facts and figures.

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Socony-Vacuum

Process Products

SOCONY-VACUUM

Process Products

TESTED IS TRUSTED

Thanks to our Scott "Picturized" Chart file

I can go back for years into our experience, and find answers to questions like—

1) What are the "tendering" effects of various finishing methods?
2) What is the desired elasticity for each type of weaving?
3) How does slashing change the tensile properties of our yarn?
4) What are the proper tensile characteristics to avoid "shiners"?
5) What are the specific effects of various traveler-ring combinations on the yarn?
6) What are the "reproducibility characteristics" of each of our fabrics?
7) What differences in fabric strength result from using different brands of dyestuffs?
8) In threads made from the same yarn, how will different finishes affect final strength?

These and many more important Control Functions become a matter of CERTAINTY and RECORD when you utilize *Scott Picturized Testing for tensile, hysteresis, burst, crepeage, twist, flexing, etc. Many models, from single filament to 2000 lbs. tensile.

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Catalog 50 upon request

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The diastatic activity of each batch of Exsize-T is carefully standardized to give uniform results each time used. Exsize-T is not a chemical but a liquid enzyme concentrate — efficient, economical, safe. Write for booklet!

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HARTOFOL gives Extra wetting-out action

HARTOFOL Shows Nearly Twice the Wetting-Out Action Displayed by the Conventional Alkylated Aromatic Sulfonates

This *concentrated* alkylated aromatic sulfonate, available as a liquid gel, is stable to acids, alkalies and hard water. HARTOFOL contains very little salt — you pay for the active organic ingredients only!

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COMBINATION BEAM AND PACKAGE
DYEING MACHINES ARE AS

Versatile

AS HER DEMANDS ARE VARIED

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Machines are available in single or multiple kier set-ups ranging from 1 to 2,000 pound units.

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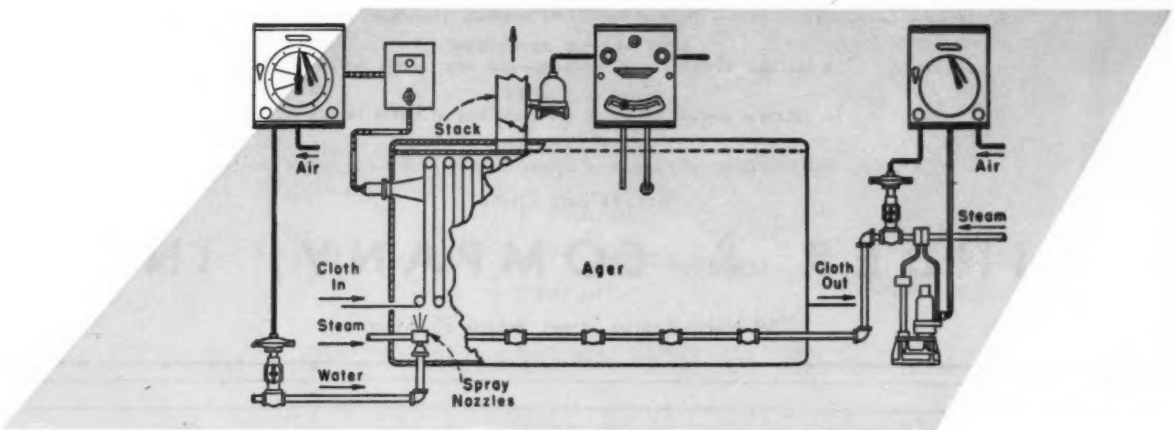
New— **BROWN AGER CONTROL SYSTEM**

PRODUCES UNIFORM, HIGH-QUALITY PRINTS

. . . AND LOWERS OPERATING COSTS!



HERE's the solution to one of the Textile Industry's toughest problems . . . an automatic aging control system that really works.

Outside air is prevented from entering the ager by maintaining a slight internal pressure. Cloth temperature is accurately measured and recorded . . . and is controlled by a water spray which is sufficient to bring regain to equilibrium with ager atmosphere, without "puddling." Steam flow is carefully guarded to produce optimum results without waste.

This up-to-the-minute Brown Ager Control System is a sure bet for better prints, at lower cost, throughout the industry. Call in your local Honeywell engineer for complete information . . . he is as near as your phone . . . or write for a copy of Instrumentation Data Sheet 8.1-30. MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4562 Wayne Avenue, Phila. 44, Pa. Offices in more than 80 principal cities of the United States, Canada and throughout the world.

FOR THE TEXTILE INDUSTRY

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The original warp size assistant in dry form; reduces costs by saving starch, increasing efficiency, and reducing shedding.

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and
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Unusual one piece warp sizes for Spun Rayon, Worsteds, and many other natural and synthetic blends.

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A cold water soluble one piece size for Spun Rayon and other blends, where easy removal by scouring is desirable.

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A cold water soluble size for Viscose Filament Yarns. No softeners, plasticizers or penetrants are required.

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A one bath water repellent for Cotton and other textile fabrics.

LINCO BINDER
An excellent product for use in the backfilling of textile fabrics.

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A superior white finishing paste imparting unusual hand to all types of cotton fabrics.

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RAW STOCK DYEING MACHINES, 250# to 1500# capacity per batch.

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ALL STAINLESS STEEL DYE KETTLES
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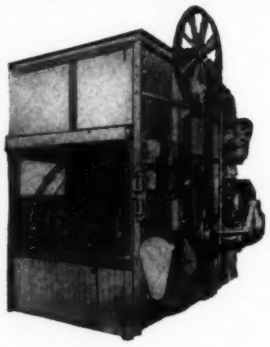
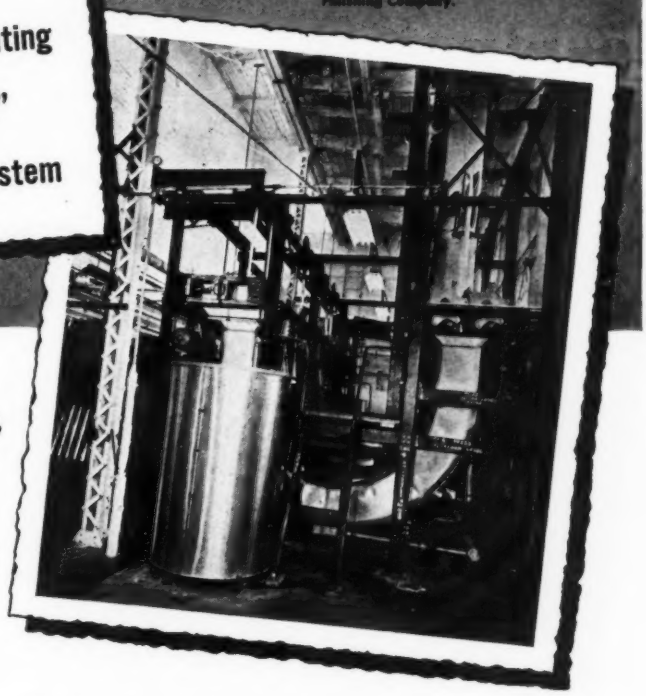


KLAUDER WELDON GILES MACHINE COMPANY

First report from mill now operating

Butterworth-Du Pont "Junior"

Continuous Peroxide Bleaching System



Small Two-Stage Continuous Peroxide Bleaching Unit in Operation at Kerriglen Finishing Company.

THE MILL: Kerriglen Finishing Company, Providence, Rhode Island

THE UNIT: Butterworth "Junior" Two-Stage Continuous Peroxide Bleaching Unit

THE GOODS: 80 x 80 4 yard/lb. print cloth

THE RESULTS: CONSISTENT PRODUCTION OF HIGH-QUALITY BLEACH AT CONSIDERABLE COST SAVINGS!

In May of this year, Kerriglen installed the first small size, two-stage Continuous Peroxide Bleaching Range—a Butterworth "Junior" Two-Stage Unit. This is a complete range developed cooperatively by Du Pont and Butterworth especially for small production bleaching. Since installation, the unit has been operated regularly.

Here's what Archie Stevenson, President and General Manager of Kerriglen, has to say about the "Junior" Unit's performance:

"Our 'Junior' Bleaching Range is producing between 3500 and 4000 yards per hour of 80 x 80 cotton print cloth suitably bleached for our printing process. Through use of the unit, there has been an appreciable saving in bleaching costs.

"The bleached cloth is extremely uniform and the full strength of the cloth is apparently retained."

With installations like this, every mill can get high-quality bleaching, continuously and economically. And large mills can do specialty bleaching quickly, efficiently, and at low cost.

Although Du Pont does not build or sell equipment, Du Pont Technical Service will analyze your requirements and help in laying out a system. A complete staff of Technical Service Representatives is available for assistance in starting operations and training your personnel. For more information, send the coupon below.

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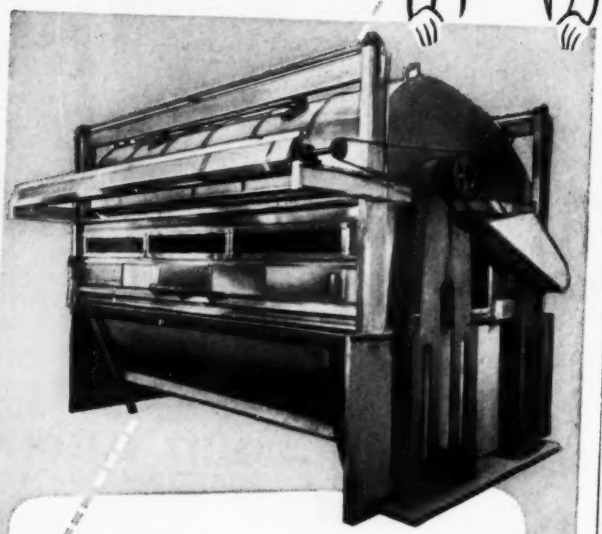
3 Features designed for LOW COST DYEING



1 This Dyebox is Fully Enclosed

— to keep heat and moisture where they belong, in the box; to save fuel, steam, water and dyestuffs; . . . to end dyehouse fog; to increase production per man hour; to give you better work.

2 This Dyebox is Stainless Steel

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3 This Dyebox is Blickman Built

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on the occasion of your Annual Meeting and Convention

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MODERN YARN DYEING BY THE ABINGTON SYSTEM

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THIS SAMPLE OR SMALL LOT DYEING UNIT IS A PERFECT MINIATURE OF THE ABINGTON SYSTEM FOR BEAM AND PACKAGE DYEING

STAINLESS THROUGHOUT

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Vacuum Card Strippers for Cotton, Wool, Worsted and Synthetics • Dumping Receivers and Filter Receivers • Process Waste Collectors • Dyeing, Extracting and Drying Machines • Abington Weaver's Knotters • Vacuum Conveyors for Combers • Comber Noil Conveying and Collecting Equipment • Vacuum Cleaning Equipment for Spinning Rooms and Weave Rooms

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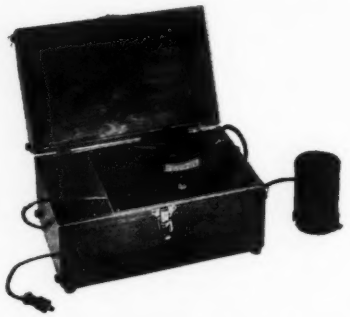
REFLECTION METER



A truly practical precision instrument for color matching and for specifying color by tristimulus values, also for fading and detergency tests . . . for production control and laboratory work.

Portable, sturdy, simple to operate

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- Provide uniform, dependable performance.
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- An added plus value — our fine technical service and laboratory are always at your command.

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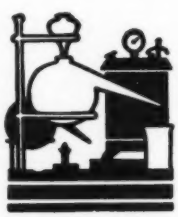

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REPLACES soap or portion of your Soap—for SCOURING piece goods, Cotton, Wool, Rayon, Acetate or Nylon.

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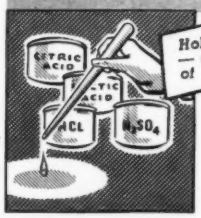

Write today for fully descriptive catalog about Prufcoat BX White Enamel — *The Liquid Plastic that STOPS CORROSION and STAYS WHITE.* Address: Prufcoat Laboratories, Inc., 63 Main Street, Cambridge 42, Massachusetts.

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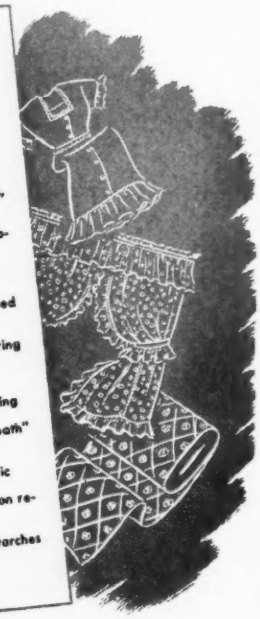

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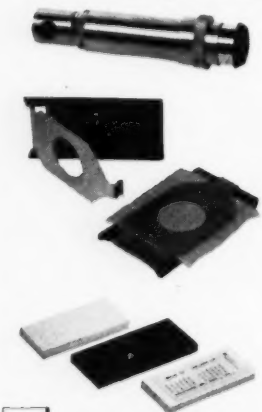

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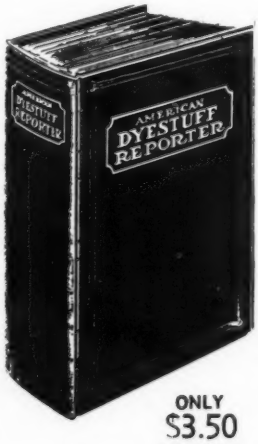

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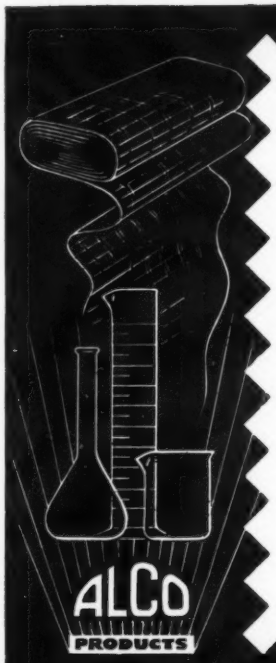

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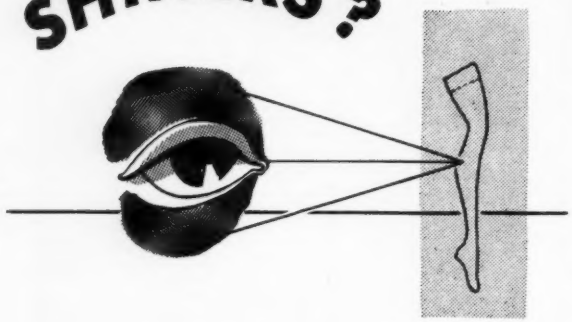

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0.72	1 oz. 67 grains	5 oz. 333 grains	11 oz. 228 grains
0.71	1 oz. 60 grains	5 oz. 298 grains	11 oz. 158 grains
0.70	1 oz. 53 grains	5 oz. 263 grains	11 oz. 88 grains
0.69	1 oz. 46 grains	5 oz. 228 grains	11 oz. 18 grains
0.68	1 oz. 39 grains	5 oz. 193 grains	10 oz. 385 grains
0.67	1 oz. 32 grains	5 oz. 158 grains	10 oz. 315 grains
0.66	1 oz. 25 grains	5 oz. 123 grains	10 oz. 245 grains
0.65	1 oz. 18 grains	5 oz. 88 grains	10 oz. 175 grains
0.64	1 oz. 11 grains	5 oz. 53 grains	10 oz. 105 grains
0.63	1 oz. 4 grains	5 oz. 18 grains	10 oz. 35 grains
0.62	434 grains	4 oz. 420 grains	9 oz. 403 grains
0.61	427 grains	4 oz. 385 grains	9 oz. 333 grains
0.60	420 grains	4 oz. 350 grains	9 oz. 263 grains
0.59	413 grains	4 oz. 315 grains	9 oz. 193 grains
0.58	406 grains	4 oz. 280 grains	9 oz. 123 grains
0.57	399 grains	4 oz. 245 grains	9 oz. 53 grains
0.56	392 grains	4 oz. 210 grains	8 oz. 420 grains
0.55	385 grains	4 oz. 175 grains	8 oz. 350 grains
0.54	378 grains	4 oz. 140 grains	8 oz. 280 grains
0.53	371 grains	4 oz. 105 grains	8 oz. 210 grains
0.52	364 grains	4 oz. 70 grains	8 oz. 140 grains
0.51	357 grains	4 oz. 35 grains	8 oz. 70 grains
0.50	350 grains	4 oz.	8 oz.
0.49	343 grains	3 oz. 403 grains	7 oz. 368 grains
0.48	336 grains	3 oz. 368 grains	7 oz. 298 grains
0.47	329 grains	3 oz. 333 grains	7 oz. 228 grains
0.46	322 grains	3 oz. 298 grains	7 oz. 158 grains
0.45	315 grains	3 oz. 263 grains	7 oz. 88 grains
0.44	308 grains	3 oz. 228 grains	7 oz. 18 grains
0.43	301 grains	3 oz. 193 grains	6 oz. 385 grains
0.42	294 grains	3 oz. 158 grains	6 oz. 315 grains
0.41	287 grains	3 oz. 123 grains	6 oz. 245 grains
0.40	280 grains	3 oz. 88 grains	6 oz. 175 grains
0.39	273 grains	3 oz. 53 grains	6 oz. 105 grains
0.38	266 grains	3 oz. 18 grains	6 oz. 35 grains
0.37	259 grains	2 oz. 420 grains	5 oz. 403 grains
0.36	252 grains	2 oz. 385 grains	5 oz. 333 grains
0.35	245 grains	2 oz. 350 grains	5 oz. 263 grains
0.34	238 grains	2 oz. 315 grains	5 oz. 193 grains
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0.28	196 grains	2 oz. 105 grains	4 oz. 210 grains
0.27	189 grains	2 oz. 70 grains	4 oz. 140 grains
0.26	182 grains	2 oz. 35 grains	4 oz. 70 grains
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0.24	168 grains	1 oz. 403 grains	3 oz. 368 grains
0.23	161 grains	1 oz. 368 grains	3 oz. 298 grains
0.22	154 grains	1 oz. 333 grains	3 oz. 228 grains
0.21	147 grains	1 oz. 298 grains	3 oz. 158 grains
0.20	140 grains	1 oz. 263 grains	3 oz. 88 grains
0.19	133 grains	1 oz. 228 grains	3 oz. 18 grains
0.18	126 grains	1 oz. 193 grains	2 oz. 385 grains
0.17	119 grains	1 oz. 158 grains	2 oz. 315 grains
0.16	112 grains	1 oz. 123 grains	2 oz. 245 grains
0.15	105 grains	1 oz. 88 grains	2 oz. 175 grains
0.14	98 grains	1 oz. 53 grains	2 oz. 105 grains
0.13	91 grains	1 oz. 18 grains	2 oz. 35 grains
0.12	84 grains	420 grains	1 oz. 403 grains
0.11	77 grains	385 grains	1 oz. 333 grains
0.10	70 grains	350 grains	1 oz. 263 grains
0.09	63 grains	315 grains	1 oz. 193 grains
0.08	56 grains	280 grains	1 oz. 123 grains
0.07	49 grains	245 grains	1 oz. 53 grains
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